

**The Role of Tour Operators  
in Visitor Management Planning:  
The Case Study of Algonquin Provincial Park**

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## **Epigraph**

In the end we conserve only what we love; we will love only what we understand; and we understand only what we are taught.

- Baba Dioum, Senegalese Ecologist

## Foreword

The researcher has been going on canoe trips in Algonquin Provincial Park (APP) for the last seventeen years, and has witnessed as well as become increasingly more concerned about the ecological decline in the back-country of APP, particularly within a two-day paddle of access points along Hwy 60. This personal connection to APP has lead the researcher to conduct research in APP that explores the potential of tour operators operating in APP as delivery agents of low-impact camping ethics and skills interpretation, specifically Leave No Trace (LNT) principles, as Ontario Parks faces ever-dwindling budget, staff, and time. This major paper explores visitor management planning (VMP) and, more specifically, visitor management strategies and tactics that can be utilized by Ontario Parks and affected stakeholders to mitigate or eliminate visitor-induced ecological impacts in back-country of APP.

This major paper fulfills the learning objectives outlined in the researchers MES Plan of Study. Through conducting the major paper research, the researcher learned that protected areas are an important aspect of environmental planning that seek to permanently protect significant natural and cultural heritage features. However, protected areas, such as APP, are not pristine areas. APP boundaries do not protect entire watersheds or the home range of the most space-demanding species, leaving the park's ecosystem highly susceptible to forces beyond the park's boundaries and the jurisdiction of Ontario Parks. Within the boundaries of APP, one of the dominant land-use is outdoor recreation. Given Ontario Parks jurisdiction, the agency should focus on VMP in order to mitigate or eliminate visitor-related ecological impacts. While there are numerous VMP frameworks that could be utilized by Ontario Parks, carrying capacity is the only VMP briefly mentioned in the Algonquin Park Management Plan (APMP) (1998). Reliance on carrying capacity alone has proven to be an inadequate VMP framework to address social and



environmental degradation. Ontario Parks favours the command-and-control, top-down approach to visitor management, which has also proven to be ineffective at addressing visitor-related ecological impacts. To maintain or restore the ecological integrity of APP will require the use of other visitor management strategies and tactics as well as collaboration with affected stakeholders to curb ecological and social deterioration in the park. This major paper focuses on changing visitors' attitudes and behaviours through the use of low-impact camping ethics and skills interpretation, in order to reduce visitors impacts. A documentation and literature review was undertaken for this major paper, which showed that interpretation can be a very effective visitor management tool that may be used to encourage behaviour and attitude modification. The effectiveness of interpretation is dependent on multiple factors, such as the number of messages delivered. In addition, primary research was undertaken to determine what and how messages were delivered by a tour operator on guided canoe trips in APP. The researchers findings reveal that in order for tour operators to assist Ontario Parks with delivering park interpretation, the messages that tour operators are delivering need to be consistent with park interpretation objectives and programs. The researcher provides practical recommendations to elevate the role of tour operators in delivering park interpretation.

## Abstract

The first *State of Ontario's Protected Areas Report* (2011) identified visitor impacts as one of the known threats to the maintenance or restoration of ecological integrity in Ontario's provincial parks. Algonquin Provincial Park (APP) sustains the impacts of nearly million visitors per year (Ministry of Natural Resources, 2010), more than any other provincial park in Ontario. To mitigate these visitor impacts, APP has entered into a Memorandum of Understanding with The Friends of Algonquin Park and the Algonquin Backcountry Recreationists to be the first provincial park in Ontario to officially adopt and deliver the Leave No Trace (LNT) program in Spring 2011. Due to limited funding, staff, and time, tour operators operating in APP may also be potentially important delivery-agents of the LNT program. Research shows that interpretation, through personal contact, is an effective visitor management tactic that can be used to encourage visitors to adopt an enhanced conservation ethic and modify their behaviour, such as LNT principles, in order to reduce their ecological impacts on the protected area.

This case study used three methods to examine the type of interpretation currently delivered by a tour operator offering guided canoe trips in APP: (1) literature and documentation review; (2) focused interviews to determine the general manager's, guides, and clients knowledge and use of LNT principles; and (3) participant observation to identify the actual LNT messages delivered and behaviour modelled by guides.

The findings of this study reveal that guides are somewhat familiar with the LNT program and are practicing at least one of the seven LNT principles while canoe trip guiding. While litter and campfire-related impacts are identified as the most commonly observed visitor-related impacts by the guides, guides are more apt to properly dispose of waste, but still rely

solely on campfires to cook all the meals at the campsite as well as having a nightly pleasure fire, despite having to collect appropriate firewood along portage trails or around the perimeter of the lake, due to barren campsites. These findings show that tour operators can play a much greater role in delivering the LNT program; however, guides require additional LNT training, in order to strengthen their role as delivery-agents of the LNT program in APP. Enhancing tour operators role in delivering LNT program will require greater involvement in VMP through collaborative planning, the establishment of a tour operators association to represent the collective interests of tour operators, and the use of a business licence scheme to ensure tour operators are incorporating the LNT program into guided canoe trips.

## **Chapter 1: Introduction**

Algonquin Provincial Park (APP) is the oldest provincial park in Canada and Ontario. It was established in 1893 as “a public park, and forest reservation, fish and game preserve, health resort and pleasure ground for the benefit, advantage and enjoyment of the people of the Province” (Saunders, 1963, p. 85). From the onset, APP was established not only for preservation, but also for recreation, resorts, cottaging, logging, mining, farming, and hydro-electricity generation. The multiple-use doctrine that dominated the establishment of the early provincial parks in Ontario reflects the ideology of utilitarian conservationists. The conservationist ideology advanced by Gifford Pinchot, the first chief of the US Forest Service, advocated the multiple- and wise-use of forest resources, through scientific management (Malcolm, 2009). The multiple-use doctrine held that recreation, logging, and conservation could co-exist within APP. This meant that the initial provincial parks were set aside and managed for utility and profit, instead of recreation and conservation.

The validity of the multiple-use, conservationist ideology was challenged as early as 1927 when clashes between loggers and recreationalists emerged as a result of some logging companies logging along the shorelines of canoe routes (Killan, 1993). Conflict between the multiple-uses of APP prompted the park superintendent to implement new park policies that would ease the emerging public concern surrounding logging and the loss of scenic value. Since profit remained the priority of the then Department of Lands and Forests (DLF), encouraging recreation was seen as a revenue generating activity that should be further pursued. This resulted in the park superintendent implementing new policies to ban logging lake shorelines (Killan, 1993). With the construction of the park highway complete in 1935, the number and type of

visitors dramatically increased. The construction of the highway provided unprecedented access to APP (Killan, 1993).

With the increase in visitors, the conflict within APP shifted from disputes between conservationists and recreationalists to preservationists and recreationalists. As early as 1947, APP began to exhibit environmental degradation caused by the growth in the number of visitors and lack of policies to effectively cope with the increase in visitors. In 1947, Professor J.R. Dymond, Director of the Royal Ontario Museum of Zoology, cottage leaseholder, and the first interpreter in APP, wrote to Frank MacDougall, then the Deputy Minister of DLF, to express his dismay over the widespread litter problem in the park and the damage inflicted upon the natural environment by incapable recreationalists that lacked basic woodcraft skills (Killan, 1993). This prompted MacDougall to inspect the park and he arrived at the same conclusions. “We now seem to be in a period of deterioration,” he admitted sadly, “and forthright steps will have to be taken...to stabilize the situation” (Killan, 1993, p. 77). Similar situations unfolded in other provincial parks, such as Pinery and Rondeau Provincial Parks, with overcrowding, unsuitable activities (e.g., miniature golf), and the proliferation of private cottages, resulting in internal stress to the natural environment of the provincial parks (Killan, 1993). By the end of World War II (WWII), the number of park visitors doubled, resulting in intense pressure on the natural environment of Ontario’s provincial parks.

The conflict between preservationists and recreationists was further exacerbated by the absence of general policies, management guidelines, and a master plan for APP. In the absence of any plans or policies, park administrators and politicians had the power to change management practices on a whim. In 1958, MacDougall led the initiative to draft the first APP Master Plan, which described logging operations, road access, preservation of wilderness areas,

and recreational facilities (Killan, 1993). The initial APP Master Plan was drafted in just four weeks and abandoned just as quickly. The fundamental weakness of the first APP Master Plan was the absence of zones showing where logging would, and would not, be permitted; therefore, the conflict between logging, recreation, and preservation would persist, and the first attempt at drafting an APP Master Plan failed dismally (Killan, 1993).

It took 91 years after park creation to develop a Master Plan for APP in 1974. Since that time, the Master Plan (now management plan) has been revised three times, with the most recent revision in 1998. The current APMP (1998) is the official policy document for the management and development of APP. Despite over 100 years of conflict between logging, recreation, and preservation, the current APMP (1998) does not contain any policies specifically addressing “visitor management.” Eagles and Bando (2009) argue that this is because the management planning process undertaken by Ontario Parks is typically carried out as a land-use planning exercise, utilizing maps to show the location of resources and activities within the context of land capability. The current approach utilized by Ontario Parks constitutes a weak approach to protected area planning as it does not address many fundamental aspects of park planning, such as visitor management planning (VMP).

The only VMP framework discussed in the APMP (1998) is carrying capacity. Carrying capacity is a traditional approach to VMP that tries to establish the number of visitors that will not negatively change the desirable social and ecological conditions of APP. Carrying capacity was a popular VMP framework in the 1960s as a means of managing overcrowding in parks after WWII. The inability of carrying capacity to protect the natural environment of protected areas (see Bury, 1976; Godin & Leonard, 1977; Clark & Stankey, 1979; Washburne, 1982; McCool & Lime, 2001), resulted in park agencies and researchers developing improved VMP frameworks,

such as Limited of Acceptable Change, and Visitor Experience and Resource Protection. Yet, Ontario Parks continues to rely on carrying capacity as the only VMP framework used for APP and many other provincial parks, such as Killarney Provincial Park.

In the absence of strategic VMP, APP continues to exhibit significant ecological deterioration, similar to visitor-related ecological impacts experienced 60 years ago. Litter, campfire-related impacts, and trampling of vegetation continue to plague park management. Limiting the number of park visitors and segregating different users by zones has proven to be insufficient visitor management strategies to effectively mitigate these problems. In order to accommodate visitation that has remained steady since 1993 at approximately 850,000 visitors per year (Eagles & Bandoh, 2009), other visitor management strategies (e.g., change visitors behaviour and ethics) and tactics (e.g., interpretation) need to be implemented by park management and other affected stakeholders, such as tour operators.

Tour operators operating in APP, represent a currently under-utilized group of affected stakeholders that may play a significant role in delivering park interpretation<sup>1</sup>, specifically the LNT program. This major paper will examine the level of knowledge of low-impact outdoor recreation skills and ethics that guides in APP possess, and if, and how they teach these ethics and skills to guided canoe trip participants. In addition, the ability of past guided canoe trip participants to recall the skills and/or ethics taught or modeled on their guided canoe trip by the guide, and if these ethics and skills were applied on later self-guided canoe trip, was studied. The specific research question the researcher seeks to answer is, are low-impact outdoor recreation ethics and skills, learned through firsthand experience, taught on guided canoe trips in APP? If so, are low-impact outdoor recreation ethics and skills retained and applied to future

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<sup>1</sup> Tour operators can also play an important role in increasing park visitors appreciation of the natural and cultural heritage of APP as well as park management goals, objectives, and policies.

self-guided canoe trips in APP? If not, why are low-impact outdoor recreation skills and ethics not being taught and how can this issue be addressed? This research will provide important insight into the potential role tour operators can play in becoming delivery agents of LNT program and more broadly their participation in VMP in APP.



## Chapter 2: Methods

### 2.1 Case Study

To operationalize the research question, a single case study method has been selected. Yin (2009) states that “A case study is an empirical inquiry that investigates a contemporary phenomenon in-depth and within its real-life context, especially when, the boundaries between phenomenon and context are not clearly evident” (p. 18). Yin emphasizes there are three conditions when determining if a case study is the most appropriate research method. First, the research question should seek to answer “how” and “why” questions. Second, the extent of control the researcher has over relevant behaviours or events is minimal or none. The case study method is appropriate when the researcher is not seeking to manipulate the participants’ behaviour directly, precisely and systematically (e.g., observing canoe guides instructing canoe trip participants). And, finally, a case study is used when examining a contemporary event. For example, the contemporary event in this case study is the low-impact outdoor recreation skills taught on guided canoe trips in APP, during the summer 2011 season. Using the case study method allows the researcher to examine *how* canoe guides teach low-impact outdoor recreation ethics and skill to canoe trip participants, *during* the 2011 summer season, *on* real-life guided canoe trips, in APP, in order to determine their contribution to VMP objectives.

In selecting a tour operator to partner with for the case study research, the researcher contacted, via e-mail, five private tour operators, providing guided canoe trip services within APP. The selection of potential tour operators was based on four criteria:

1. *Business type*: a private, for-profit company;
2. *Service*: offers guided canoe trips for private groups, not just school groups;

3. *Location*: guided canoe trips take place in APP; and
4. *Mandate of tour operator*: the tour operator's mandate contains a conservation focus.

Only one of the five tour operators responded to the first or second initial contact e-mail. The outcome was a partnership with a single tour operator. The tour operator fits all the criteria identified above.

A common concern regarding a single case study is how the findings from a single case study can be generalized. However, as with experiments, a case study can be “generalizable to theoretical propositions and not to populations or universes” (Yin, 2009, p. 15). Indeed, the “goal of a case study is to expand and generalize theories” (Yin, 2009, p. 15). A single case study is appropriate when it is representative of a typical set of values, beliefs, behaviours, or events. Gerring (2007) states that, in order for a single case study to provide insight into a broader phenomenon, it must be representative of a broader set of cases, such as can private-public partnerships effectively deliver low-impact outdoor recreation education? The objective of a single case study is to capture the circumstances and conditions of a typical situation (Yin, 2009), such as a typical guided canoe trip. However, a potential pitfall of the single case study method is its potential to turn out not to be the case it was thought to be at the outset (Yin, 2009). In fact, this case study produced interesting findings that diverged from the preliminary literature and document review.

## **2.2 Methods**

### **2.2.1 Literature and Documentation Review**

Once the case study was identified, information was collected using three qualitative research methods. First, a thorough literature and documentation review of provincial park planning and management in the Province of Ontario was undertaken. The focus of the literature

and documentation review was on system and individual provincial park planning, VMP, visitor-related ecological impacts, management strategies and tactics, and, in particular, low-impact camping skills (e.g., LNT) interpretation delivered by tour operators, that was undertaken to gain an understanding of current park legislation, policy, theory and practice.

### **2.2.2 Interviews**

Interviews were the primary source of information for this case study. Interviews were conducted with the general manager, tour guides, and past guided canoe trip participants. The development of the interview questions and conducting the interviews took place over a four month period. The format of the interviews was focused. This type of case study interview remains open-ended and conversational, but is more likely to follow a certain set of questions (Merton, Fiske & Kendall, 1990). Typically, focused interviews are shorter, usually between an hour to an hour and a half, than in-depth interviews (Merton *et al.*, 1990).

The purpose of interviewing the tour guides was fourfold: to understand their level of experience and expertise; to understand visitors ecological impacts; to understand their knowledge and adoption of low-impact camping ethics and skills, in particular LNT principles; and to learn how the tour guide teaches low-impact camping ethics and skills. A copy of the tour guide interview questions are available in Appendix A. Access to the tour guides who worked for the tour operator was through a gatekeeper, who is an individual who controls access to people (Seidman, 2006). The case study interviews were secured and arranged through the person who is responsible for the operations of the company, specifically the general manager. The formal gatekeeper, the general manager, provided access to his employees and encouraged voluntary participation in the research. The gatekeeper's endorsement of the research can create a sense of official sponsorship and may appear as if the researcher is someone higher in the

hierarchy instead of outside it (Seidman, 2006). In order to overcome this challenge, participants were assured that anything they said would remain confidential and anonymous. The interviewees were informed that their names would not be linked to any comments they made and would not appear in any report or publication of this research. A total of eight interviews were conducted with tour guides for this case study. All the interviews were conducted over the telephone due to geographical distance. Typically, interviews lasted between one to one and a half hours. Before starting the interview, verbal consent was obtained. A copy of the verbal consent agreement is available in Appendix B.

Interviews were also conducted with past guided canoe trip participants. The purpose of interviewing the past canoe trip participants was fourfold: to identify canoe trip expectations; to gain insight into their pre- and during canoe trip experience; to determine if the participants felt they possess the skills to go on their own canoe trip; and, if they have been on a canoe trip since, to describe their experience. A copy of the canoe trip participant's interview questions are available in Appendix C. Access to past canoe trip participants was granted through a gatekeeper. Again, the formal gatekeeper was the general manager who provided access to his clients' information and encouraged voluntary participation in the research. In order to protect the privacy of their clients, past canoe trip participants were contacted, via e-mail, directly by the gatekeeper. The gatekeeper e-mailed 20 past canoe trip participants who had been on a guided canoe trip within the last three years. The company was not able to contact past canoe trip participants before 2009 due to record keeping limitations and time. From that point forward, people interested in participating in the research were encouraged to contact the researcher directly to arrange an interview. To maintain past canoe trip participants privacy, interviewees were assured that anything they say would remain confidential and anonymous. The

interviewees were informed that their name would not be linked to any comments they made and would not appear in any report or publication of this research. Of the 20 past canoe trip participants e-mailed, five participants responded to the request to participate in the research. There were a total of five interviews conducted with past canoe trip participants for the case study. All the interviews were conducted over the telephone due to geographical distance. Typically, interviews took between 45 minutes to an hour to complete. Before starting the interview, verbal consent was obtained. A copy of the verbal consent agreement is available in Appendix D.

Finally, an interview was also conducted with the operations manager. The purpose of interviewing the operations manager was fourfold: to gain insight into the company's operations; the tour guide hiring process; guided canoe trip planning process; and the incorporation of LNT program into guided canoe trips. A copy of the operations managers interview questions is available in Appendix D.

The involvement of human participants in the research required ethics approval. The ethics application was submitted early September 2011 and was approved by The Faculty of Environmental Studies' Human Participants Research Committee in October 2011.

### **2.2.3 Participant Observation**

One of the criteria for using the case study method is the examination of a current phenomenon within its real-life context. Dewalt and Dewalt (2002) stated that "participant observation is a method in which a researcher takes part in the daily activities, rituals, interactions, and events of a group of people as one of the means of learning the explicit and tacit aspects of their life routines and their culture" (p. 1). Participant observation is a type of observation in which the researcher is not merely a passive observer but may actually participate

in the events being studied (Yin, 2009). Observing canoe guides and canoe trip participants while on an actual guided canoe trip serves as another significant source of evidence in this case study.

Given the nature of canoe tripping, the researcher was a complete participant during the guided canoe trips. Spradley (1980) argued that complete participation occurs when the researcher becomes a member of the group. On the guided canoe trips, the researcher participated as a full member of the trip, including setting-up camping equipment, preparing and cooking meals, collecting firewood, and treating water, among other tasks. Dewalt and Dewalt (2002) believed personal characteristics of the researcher may influence their degree of participation. The researcher has extensive experience with canoe tripping in APP and was a canoe guide for an outdoor education centre. The researcher's comfort level with the activity allowed the researcher to fully participate in the guided canoe trips.

The primary purpose of participating in guided canoe trips as a participant observer was to gain insight into what and how camping ethics and/or skills were taught. The secondary purpose was to observe how canoe trip participants responded to guide's instructions or modeling of camping ethics and/or skills and if they tried to adopt them on the guided canoe trip. The researcher joined two guided canoe trips in July 2011. The first trip that the researcher joined was a four-day guided canoe trip with one male guide, three female adults, and one male teenager. The second trip that the researcher joined was a two-day guided canoe trip with one male guide, one female adult, and two young children.

A template was developed to record the low-impact camping ethics and skills, using LNT principles as a framework, that were taught on the guided canoe trip and detailed field notes were

written in the privacy of the researcher's personal tent. Photographs were also taken to document observations.

The primary strength of the participant observation method is that it provides the researcher with an opportunity to gain access to activities or groups that are otherwise inaccessible (Yin, 2009). The tour operator who partnered with the researcher only offers private group canoe trips, meaning that a family or a group of friends hire a canoe guide for a private guided canoe trip; therefore, typically, there are no "outsiders" participating in the trip. Having the opportunity to observe the activities and interactions among the guide and participants provided insight into the reality of guided canoe trips. This perspective may lead to a more "accurate" portrayal of the case study (Yin, 2009).

The primary weakness of participant observation is that the researcher may alter the situation being studied (Webb, Campbell, Schwartz & Sechret, 1966). The researcher's presence could have influenced the behaviour of the guides. For example, the guides may have been more inclined to teach low-impact camping skills because the guides were being observed by the researcher. In order to overcome this challenge, the researcher made a concerted effort to be non-intrusive, meaning that field notes were never written in front of the guides or participants. Before carrying out a task, the researcher would ask the guide how to complete the task. This was done to minimize the influence that the researcher's personal camping ethics and skills may have on the canoe trip participants and guides. The researcher's ability to balance the dual roles of observer and participant can be challenging (Dewalt & Dewalt, 2006; Yin, 2009). The sometimes physically and mentally demanding task of canoe tripping with novice campers was challenging and did limit the researcher's time to record observations. This was overcome by spending more time in the evening in the researcher's tent recording observations.

The inherent danger of participating in canoe trips required risk assessment approval. The risk assessment application was submitted early April 2011 and was approved by the Faculty of Environmental Studies' Research Committee May 2011.

### **2.3 Data Analysis**

When the interviews were completed, the researcher transcribed the tape-recorded interviews using Microsoft Word. The first step in the data analysis process involved thoughtfully reading the transcripts and identifying “codable moments” or significant words or statements that are key pieces of information (Boyatzis, 1998). This initial step in the process familiarized the researcher with the contents of the interviews. The next step in the analysis of the data was coding. Saldana (2009) states that “A code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing or evocative attribute for a portion of language-based or visual data” (p. 3). Coding is the transitional process between data collection and analysis (Saldana, 2009). Richards and Morse (2007) state that coding is more than labelling; it is the process of linking the data to the idea. Assigning words, phrases or symbols to a word or phrase enabled the researcher to identify emergent patterns and themes in the transcripts. The initial words and phrases assigned to a word or segment of the transcripts were refined after a second review of the data. During the second review trends and patterns were identified. These major trends and patterns were used to establish major research findings and link the research findings to academic theory.



### **Chapter 3: Visitor Management Planning Frameworks**

In 1954, there were only eight provincial parks in Ontario to accommodate park users (Malcolm, 2009). After WWII, the existing number of provincial parks in Ontario could not support the exponential growth in demand for outdoor recreation as a result of rapid population growth, urbanization, higher disposable incomes, institutionalization of paid vacations, increased leisure time and improved mobility (Knight & Gutzwiller, 1995; Pigram & Jenkins, 2006). For the first time many Ontarians possessed the time, money, mobility, and, given their urban lifestyles, the psychological need, to seek outdoor recreation. Killan (1993) describes the period between 1954-1967 as the “Outdoor Recreation Boom” in Ontario. The demand for outdoor recreation greatly outstripped the supply. For example, between 1950 and 1954, the number of cottage leases and motor vehicles entering APP doubled (Killan, 1993). The doubling of visitors to APP resulted in significant environmental degradation. For example, Cache Lake became so polluted that it was rendered unfit for drinking. Garbage dumps were unable to cope with the volume of waste, which resulted in black bears attacking visitors and damaging property. The situation came to a pinnacle when 100 black bears were shot by rangers in a futile attempt to remedy the situation (Killan, 1993). As a result, APP’s reputation as a game reserve and pleasure ground were tarnished. The absence of VMP was having devastating effects on APP’s natural environment.

To cope with the overwhelming demand for outdoor recreation, the *Provincial Parks Act* (1954) was passed, the Parks Branch was created, and a policy statement was issued. The *Provincial Parks Act* (1954) enabled the Parks Branch to create and manage provincial parks. The mandate of the newly-formed Parks Branch was to rapidly expand the number of provincial parks in Ontario (Malcolm, 2009). And, under the policy statement, provincial parks were to

serve the dual function of protecting and conserving natural resources and providing recreation (Killan, 1993). The number of provincial parks grew exponentially between 1954 and 1970, from eight to 108 (Malcolm, 2009). The primary criterion for selecting sites for candidate provincial parks were beaches, located within a two-hour drive of large urban centres, and situated 160-240 km apart (Killan, 1993). Although many of these provincial parks contain interesting natural features, their selection was driven by the explosion in the demand for outdoor recreation, not an overall plan for biological conservation.

During the rapid expansion of provincial parks in Ontario, recreation took precedence over preservation. In APP, crowding, conflict between canoeists and motor boaters, and litter became major issues facing park management (Killan, 1993). Congestion at major access points and along popular canoe routes diminished the visitors' recreational experience. Mounds of waste along these canoe routes further reduced the visitors experience and degraded the natural environment. Garbage became such a significant issue in the interior of APP that park management launched the "pack out your own litter" project (Killan, 1993). The project distributed yellow litter bags to interior users that were numbered and recorded to ensure that visitors packed out their waste (Killan, 1993), which are still in use today. Conflict between canoeists and motorboat users emerged as a serious issue as the two groups possessed differing views of wilderness. "Canoeists were attracted to Algonquin, by the primitive qualities of the park, while motorboat users came primarily for the fishing" (Killan, 1993, p. 153). Separating these conflicting user groups was achieved through zoning as well as banning motorboat use on most interior lakes and rivers (Killan, 1993). Today, motorboats are only permitted on 34 lakes in APP (Friends of Algonquin, 2012d). Crowding at major access points and popular canoe routes still exists. These attempts at visitor management were reactive and piecemeal. The lack

of visitor planning and management meant that problems were addressed once they arose, on a day-to-day basis.

### **3.1 Visitor Management Planning**

The “Outdoor Recreation Boom” in Canada and the United States caused park agencies and researchers to develop VMP frameworks to cope with the tremendous increase in park visitors after World War II. The intent of VMP is to find an acceptable compromise between the absolute protection of resources and the unrestricted access to resources for recreational use (US National Park Service, 1997). Eagles and Bando (2009) are more critical of VMP and describe it as “...a political process of consultation, mediation, and compromise of many stakeholders occurring within the context set by law and policy” (p. 101). For practical purposes, VMP can be understood as an ongoing process of identifying *desirable future conditions*, establishing *indicators* of high-quality experiences and resource conditions, identification of *standards* that define minimum desirable conditions, *monitoring* park conditions to determine if and when *management actions* are required to restore desirable conditions (US National Park Service, 1997).

The earliest attempt at VMP was applying the concept of carrying capacity to parks in the 1960s. The shortcomings of carrying capacity became apparent when the resource and social conditions in parks continued to deteriorate. Other VMP frameworks were developed to improve the social and, in most cases, ecological conditions in parks. The following discussion describes and evaluates as well as provides examples of application of VMP frameworks.

#### **3.1.1 Carrying Capacity**

Following the end of World War II, the dramatic increase in demand for outdoor recreation caused serious crowding in the existing parks. At this time, many of the park staff were not

trained in park management, but in forestry, wildlife and range management; therefore, the issue of people and their impacts was attributed to carrying capacity (McCool & Lime, 2001). The concept was adapted from range and wildlife management, which was used to determine the population size of a particular species that can be sustained by the environment they inhabited. Carrying capacity was first applied to protected area planning and management by the US National Park Service in the mid-1930s in a report outlining policy recommendations for the California Sierras that asked the question “How large a crowd can be turned loose in a wilderness without destroying its essential qualities?” (Sumner, 1936). When a person visits a protected area, the quality of the natural environment and visitors experiences are always affected. Thus, there are three types of carrying capacity concepts that can be applied to protected areas: ecological, social, and physical.

In the context of protected areas, “ecological carrying capacity refers to the capacity of the natural environment to withstand human use” (Haider & Payne, 2009, p. 171). Determining the ecological carrying capacity of a protected area is based on scientific research and values. Understanding the human-induced ecological impacts requires scientific research, whereas, deciding if the amount of change, if any, to the resource is acceptable requires establishing desirable conditions in order to judge if the change is good or bad. The answer to the latter question is value laden. Thus, VMP requires the establishment of the degree of change that is acceptable before management action is taken.

In addition to the condition of the natural environment of the protected area, visitors are affected by the social environment. “Social carrying capacity focuses on the visitors experiences that visitors have in the park” (Haider & Payne, 2009, p. 171). The visitor’s experience can be positively or negatively influenced by other visitors; however, this is highly dependent on the

visitor's personal beliefs, values, attitudes, and behaviours. For example, visitor conflict may arise from overcrowding or between different user groups. Lucas (1964) attempted to determine the social carrying capacity of the Boundary Waters Canoe Area (BWCA), in Minnesota, and found that perceptions of crowding varied by each user group. For example, canoeists were more sensitive to crowding than motorboat users. This suggests that user groups engaging in different activities should be separated in order to minimize conflict and accommodate different user groups.

The carrying capacity of a protected area may also be altered by management actions. This is known as physical carrying capacity. For example, in Pacific Rim National Park Reserve, the use of boardwalks, bridges, and ladders help visitors safely experience the wilderness, as well as minimize the visitors impacts on the natural environment (Haider & Payne, 2009). This demonstrates that park management can increase the resilience and resistance of the natural environment to withstand more use; therefore, increasing the carrying capacity of the protected area. However, the proliferation of human-made structures can also diminish the recreational experience for purists and increase access to ecological sensitive areas that can be disturbed by inconsiderate or inexperienced users.

Manning (2007) argues that despite decades of research, the successful application of carrying capacity is limited because of the difficulty in determining how much impact or change should be allowed. He states that this challenge can be overcome by establishing management objectives and associated indicators and standards. Manning (2007) defines a management objective as a "broad narrative statement defining the type and quality of park conditions to be maintained" (p. 23). Again, setting management objectives (or acceptable park conditions) is a value laden exercise. Shin and Jackson (1997) found that 55.4% of wilderness campers surveyed

in Algonquin, Killarney, and Quetico Provincial Parks were strong purists who demand the most undisturbed wilderness. These findings suggest that park management should maintain a near-natural environment, with minimal structures. Stankey (1973) found that strong purists report that meeting more than two parties per day adversely affects their experience. This information can be used in formulating management objectives. Maintaining the desired ecological and social conditions in the park requires monitoring park conditions through the use of indicators and standards. “Indicators are more specific, measurable variables used to determine adherence of management objectives” (Manning, 2007, p. 23), whereas a “standard defines the minimum acceptable condition of indicator variables” (Manning, 2007, p. 23). To illustrate the difference, an indicator may be the number of parties encountered daily and the standard defines the number of acceptable encounters per day, in order to maintain opportunities for solitude (management objective). Maintaining management objectives (park conditions) also requires ongoing monitoring and informed management decision-making. However, ethics, values, and politics play an important role in determining carrying capacity (Carey, 1993).

The usefulness of carrying capacity has been challenged by many scholars and practitioners. McCool and Lime (2001) describe carrying capacity as a “tempting fantasy” rather than a “useful reality.” Several authors (e.g., Bury, 1976; Washburne, 1982) have argued that calculating a “magic number” for each park and recreation areas can be determined through scientific, rather than moral choice, is misleading and obscures the role of management. McCool and Lime (2001) assert that attempting to establish a “magic number” is inappropriate and reductionist. Research has shown that the relationship between the amount of use and impacts is non-linear (e.g., Cole, 1987). The implications of these findings have profound impacts on VMP. In fact, it may be more advantageous to concentrate users, instead of limiting the number of users,

in order to concentrate impacts to a relatively small area. In a landmark study, Clark and Stankey (1979) found that people vary in their preferences for different types of outdoor recreation settings, as a result of differing motives and activities preferences. This suggests that the “average camper” with the same outdoor recreation settings does not exist. Thus, park management must provide different recreation settings and opportunities. Moreover, recreationalists also exhibit varying skill levels that may increase or decrease their impact on the natural and social environment of the park. Godin and Leonard (1977) argue that carrying capacity largely ignores the ability of management to affect the amount of use the area can accommodate. Maintaining acceptable social and natural conditions can be effectively addressed with the use of a number of other management practices (e.g., Washburne, 1982), such as visitor education. Despite the failure of carrying capacity to produce a number of visitors that would not compromise the desired quality of the natural and social environments of the park, the concept remains deeply entrenched in VMP.

In the APMP (1998), the only VMP framework briefly discussed is carrying capacity. The APMP (1998) states that “Interior recreation management policies are directed toward developing and implementing a program to regulate and distribute interior users, guard against overuse and minimize conflicts between users” (MNR, 1998, p. 37). According to the APMP (1998) “interior canoe-campsite development will be maintained at, or close to, current levels. Further campsite and canoe route development cannot be provided without a deterioration of canoe-camping or environmental quality” (p. 53), although it is unclear from the APMP (1998) what factors were used to make this determination. Restricting use is executed through the park permit system.

Carrying capacity is also the only VMP framework discussed in the Killarney Provincial Park Management Plan (KPPMP) (1985) and the Quetico Provincial Park Management Plan (QPPMP) (1999). For example, the KPPMP (1985) states “Restrictions will continue to be placed on the number of parties allowed to camp in the interior. In this way, visitors are distributed to keep levels of use more uniform in the park” (p. 10). This rationale does not reflect outdoor recreation research that advocates concentrating visitors, in order to concentrate their ecological impacts. Similar to APP, the rationing and distribution of visitors is achieved through the park permit and quota system. Both the APMP (1998) and KPPMP (1985) are quite outdated; the QPPMP (1999) that is currently undergoing review, still relies on carrying capacity to determine the appropriate number of users in the park. The Quetico Provincial Park Background Information Report (2007) states that traditionally park rangers and park users used to set carrying capacity but now a science-based approach. Park management maintains an inventory and evaluation of the capacity of Quetico’s shorelines to supply canoe-camping opportunities; identifies potential campsite locations; conducts ongoing monitoring of the condition of campsites and portages; and estimates park visitor distributions on a lake-by-lake basis, in order to determine carrying capacity. Reliance on determining the carrying capacity of these popular provincial parks shows that Ontario Parks is still pursuing numerical limits in order to minimize impacts on the social and ecological environment, based on positivist scientific inquiry and ignoring the value-laden aspects of VMP.

### **3.1.2 Recreation Opportunity Spectrum**

The Recreation Opportunity Spectrum (ROS) VMP framework was developed to address the shortfalls of social carrying capacity. Based on the findings that visitors do not have uniform recreation setting and activity preferences (Clark & Stankey, 1979), the US Department of



Agriculture Forest Service developed the ROS VMP framework to divide the landscape into a spectrum of recreation opportunities, ranging from primitive (wilderness) to urban (developed). By providing a range of recreation settings, park management were able to satisfy the visitor's motivation for engaging in the activity. For example, canoeists prefer settings that are remote and seek isolation, self-realization, and connection with nature (Brown, Driver, Gregoire & Stankey, 1987). Providing the appropriate recreational setting is based on the use of six factors: access (e.g., degree of difficulty, access system), non-recreational resource uses, onsite management (e.g., facilities), social interaction (e.g., frequency), acceptability of visitor impacts (e.g., extent and type), and acceptable regimentation (e.g., rules and regulations) (Clarke & Stankey, 1979).

The major weakness of the ROS framework is its disregard for ecological carrying capacity. The ability of the natural environment to withstand use should be of paramount concern to park management. The major strength of the ROS is its attempt to understand visitors behaviour, motivations, and preferences in order to connect recreation supply with demand. ROS is a useful visitor planning and management tool to ensure that visitors' activity and setting preferences are met. There is no evidence that ROS has been used by Ontario Parks and only a few explicit applications of ROS in Canadian national parks, such as Yoho and Pukaskwa (Payne, Carr & Cline, 1997). In Yoho National Park, Parks Canada developed four recreation zones – frontcountry, semi-primitive, primitive, and wildland – based on the ROS framework. These zones range from very developed (frontcountry) to minimal developed (wildland) to satisfy different visitors' setting, activity, and social interaction preferences. The ROS zones applied to Yoho National Park may be applied to APP. Haider and Payne (2009), however, argue that the park zoning system found in Ontario's provincial parks resembles ROS. For example, in APP,

the type and intensity of activities becomes more primitive with increasing distance from the park highway. However, supplementing Ontario Parks zoning system with ROS zones may be a more effective VMP tool to delineate the desirable social and environmental conditions in each zone in APP.

### **3.1.3 Limits of Acceptable Change**

Limits of Acceptable Change (LAC) was developed by the USA Department of Forest Services in response to the difficulty of setting a numerical recreational carrying capacity for protected areas (Eagles & McCool, 2002). The LAC expands upon the ROS framework by specifying indicators and standards for biophysical and social conditions for each setting (Haider & Payne, 2009). The steps in the LAC process are:

- Step 1: Identify area concerns and issues.
- Step 2: Define management objectives.
- Step 3: Select indicators of resource and social conditions.
- Step 4: Inventory resource and social conditions.
- Step 5: Specify standards for resource and social conditions.
- Step 6: Identify alternatives.
- Step 7: Identify management actions for each alternative.
- Step 8: Evaluate and select an alternative.
- Step 9: Implement actions and monitor conditions. (Haider & Payne, 2009, p. 183)

Unlike ROS, LAC is a problem-oriented approach to VMP. The LAC process is strengthened by stakeholder engagement in determining the range of settings, indicators, standards, and management responses (Haider & Payne, 2009). LAC may be superior to ROS as it requires monitoring and management response if social or biophysical conditions become “unacceptable.”

LAC has emerged as the most the commonly used VMP framework. For example, in Frontenac Provincial Park, Ontario Parks agency carried out a campsite impact study to determine if impacts were exceeding limits of acceptable biophysical change (Claverling, 2005).

The study found that the limits of acceptable change had been exceeded; however, dispersing visitors was not desirable as this would disperse the impacts. In preparation for management plan review, Woodland Caribou Signature Site and Sleeping Giant Provincial Park, Ontario, both incorporated limits of acceptable change into VMP documentation.

Jerkins and Pilgram (2006) state that the two main weaknesses in the LAC process are the difficulty of establishing good indicators and monitoring criteria. McCool (1990) believe there is a general lack of understanding of the capabilities of the LAC process, resulting in poor or inadequate execution. McCool (1996) points to the exclusion of field level personnel in the LAC process as one of the reasons for the poor implementation of LAC. He argues that successful implementation is dependent on field staff receiving adequate training and funding.

### **3.1.4 Visitor Impact Management**

Unlike the other VMP frameworks, the Visitor Impact Management (VIM) process was developed by researchers at the US National Parks and Conservation Association, an American environmental non-governmental organization specializing in park issues (Haider & Payne, 2009). The US National Parks and Conservation Association conducted an extensive literature review on carrying capacity and visitor impacts and applied the research to the development of a new VMP framework (Jerkins & Pilgram, 2006). The VIM process is primarily concerned for managing visitor impacts on the natural environment, although the VIM process also takes into consideration the social carrying capacity of the site (Haider & Payne, 2009). The eight steps in the VIM process are:

- Step 1: Review existing databases.
- Step 2: Review management objectives.
- Step 3: Select key impact indicators.
- Step 4: Select standards for key impact indicators.
- Step 5: Compare standards and existing conditions.
- Step 6: Identify probable causes of impacts.

Step 7: Identify appropriate management strategies.

Step 8: Implement the best strategy. (Haider & Payne, 2009, p. 187)

The major weakness of the VIM framework is that it is reactive, instead of proactive. This is particularly challenging because the cost of restoration and rehabilitation is far greater than protection. Unlike the LAC process, the VIM process does not engage the stakeholders. Park management rely on natural science data and excludes other sources of information, such as public opinion (Payne & Graham, 1993). There is no evidence that the VIM framework has been applied in any provincial park in Ontario. The VIM framework has been applied to only one Canadian national park, Jasper National Park. The VIM framework was applied to the re-development of a visitor centre and snowcoach staging facilities at the Columbia Icefields. The VIM framework was most useful in identifying the social impacts associated with the new facilities. Through the use of establishing management objectives, indicators, and standards, park management were able to drastically reduce crowding (Vaske, 1994). Unlike the LAC and ROS, VIM is applied only at the site-specific rather than the landscape level.

### **3.1. 5 Visitor Experience and Resource Protection**

In 1992, the US National Park Service developed the Visitor Experience and Resource Protection (VERP) framework to facilitate decision-making regarding ecological and social carrying capacity. The VERP framework consists of nine steps:

Step 1: Assemble a multi-disciplinary project team.

Step 2: Develop a public involvement strategy.

Step 3: Develop clear statement of park purpose, significance, and primary interpretive themes.

Step 4: Map and analyze the park's important resources and potential visitor experiences.

Step 5: Identify potential management zones that cover the range.

Step 6: Apply the potential management zones to cover the range of desired resources and social conditions consistent with the park's purpose.

Step 7: Select indicators of quality and associated standards for each zone. A monitoring plan is developed at this stage.

Step 8: Park staff compares desired conditions with existing conditions to address discrepancies (monitoring).

Step 9: Identify management strategies to address any discrepancies. Strategies should favour indirect techniques where possible. Monitoring of conditions is ongoing. (Haider & Payne, 2009, p. 189)

The VERP framework builds upon several components of other VMP frameworks, namely carrying capacity, LAC, and VIM. Like these other frameworks, VERP requires park management to set objectives, indicators, and standards, monitor conditions, and take management action where required. VERP explicitly requires the development of a public involvement strategy to ensure a more participatory planning process. The VERP process is extensive and in-depth, requiring park management to possess complete knowledge of the ecological and social conditions in all zones. Haider and Payne (2009) point to this reason for the limited application of the VERP framework in the US and no applications in Canadian national parks or Ontario provincial parks. Executing the VERP framework would require substantial time, funding, and personnel.

### **3.1.6 Comparison of VMP Frameworks**

All of the VMP frameworks are rooted in carrying capacity. However, park managers struggled to identify a “magic” number of visitors that would not diminish the natural or social environments of the park. This is because outdoor recreation is *not* a non-consumptive use of resources. The relationship between the level of use and impacts is non-linear. The “average” camper does not exist: each camper has different setting and activity preferences as well as beliefs, values, and attitudes. This realization required a shift in VMP from determining “how many visitors is too many?” to identifying “how much change, if any, is acceptable?”

There are many similarities between the VMP frameworks, yet some differences exist. The VMP frameworks were developed by attempts by researchers and park agency’s to improve

upon the previous framework. ROS is the only framework that focuses exclusively on desirable social conditions, which can also be understood as recreation settings. However, all of the proceeding VMP frameworks begin with defining the desirable social conditions as well as the resource conditions (management objectives). LAC, VIM, and VERP require the selection of indicators and standards to ensure management objectives are met. LAC and VIM processes concentrate on the identification of issues or concerns. Yet, the reactive approach of the VIM process limits the application of the framework. The VIM framework is also limited to site-specific problems, whereas ROS, LAC, and VERP can be applied at the site-specific and landscape levels.

The ROS and VIM frameworks rely solely on scientific research and professionals, whereas LAC and VERP explicitly require the engage of stakeholders. This is a considerable strength of the latter two VMP frameworks, as relying solely on scientifically-based, expert-driven approach to VMP ignores the inescapable role of value judgements (Manning, 2011). For example, formulating management objectives and standards is inherently value-based. Nonetheless, VMP should also be informed by the best available science, acknowledging the limitations of science.

All of the VMP frameworks also require monitoring and, if necessary, management action to restore desirable conditions. Monitoring requires long-term resources, both personnel and funding, to ensure the conditions of the natural or social environments are maintained. VERP favours the use of indirect visitor management strategies (e.g., interpretation), over direct visitor management strategies (e.g., limiting use or access) to restore the condition of the resources or social environments.

### 3.2 Planning in Wicked and Messy Situations

All of these VMP frameworks follow the steps of the traditional rational-comprehensive planning approach. The rational-comprehensive approach relies on scientific-based, expert-driven approach to management that assumes consensus on objectives, availability of all the scientific data to support a decision, and sufficient funding, personnel, and time (Forester, 1989). In reality, these conditions rarely exist.

Ontario Parks' financial resources have been dramatically reduced. Between 1992 and 2007, government funding for Ontario Parks has decreased by 73% (ECO, 2007). To lessen the effects of dwindling government funding, in 1996 the Government of Ontario reconfigured the Ontario Parks Agency business model, allowing provincial parks to retain park revenues (e.g., park users fees, sale of merchandise) in a special purpose account to cover park planning and operating costs (Moos, 2002); however, this does not make up for the shortfall in funding (ECO, 2007). Ontario Parks evidently lacks the financial resources to execute strategic VMP initiatives. MNR staffing levels mirrors the reduction in the budget. Between 1992 and 1997, the number of full-time equivalent positions has dropped from over 5,000 in 1992 to about 3,500 (ECO, 2005).

In the absence of adequate funding and personnel, the persistence of conflicting goals and scientific uncertainty further undermines the legitimacy of the rational-comprehensive approach to VMP. VMP, in the context of protected area planning, can be characterized as “wicked” problems and “messy” situations. “Wicked problems and messy situations are typified by multiple and competing goals, little scientific agreement on cause-effect relationships, limited time and resources, lack of information, and structural inequities in access to information and the distribution of political power” (Lachapelle *et al.*, 2003, p. 474). Faced with messy situations, agencies have adopted for a collaborative approach to planning. Collaborative planning

acknowledges that there are many different interests that must be engaged in a negotiation process to seek mutually acceptable outcomes (Gunton & Day, 2003). Collaborative planning delegates control of the planning process to stakeholders who work together in face-to-face negotiation to reach a consensus agreement (Carr, Selin & Schuett, 1998; Wondolleck & Yaffee, 2000). The involvement of contending stakeholders in the decision-making process represents considerable challenges when seeking consensus. Susskind, Field, van der Wansem, and Peyser (2007) define consensus building as “the process of brokering or facilitating agreement among the representative group of stakeholders, who may be affected by the decision” (p. 184). However, consensus defined as unanimous agreement places a heavy burden on the participants and may be very difficult to achieve when confronted with complex, uncertain, and controversial situations. Instead, McCool (2009) believes consensus-building in these situations may mean moving away from positions and discussing interests and resolving them in ways that participants can “live with it.” This means that people are willing to live with tradeoffs because they share a common goal.

Collaborative planning is a three-step process (Gunton & Day, 2003). The first step, pre-negotiation, begins with identifying the professional team and stakeholder, and preparing ground rules. The second step, negotiation, involves identifying stakeholder interests and procedures, such as joint fact finding, to find a broad range of options. The goal is to work towards a “single text” that represents the stakeholders consensus and to bind the parties to the agreement. The final step is post-negotiation. This step requires plan implementation and ongoing monitoring. The third step might be followed by renegotiation that may be necessary if there is a change in circumstances or conditions. This model differs considerably from the traditional linear model of public involvement. While the *Provincial Parks and Conservation Reserves Act (PPCRA)* (2006)



sought to improve greater public involvement through the inclusion of at least one opportunity for public consultation during the producing, reviewing, and amending of a management statement and the results of the management statement review on the environmental registry or by other appropriate means, the approach still conforms to an expert-driven model and services merely as a method of information collection, education, and technical analysis (Lachapelle *et al.*, 2003).

The collaborative planning approach may be better than the traditional rational-comprehensive approach. Collaborative planning can build understanding by facilitating the exchange of information and ideas. Collaborative planning provides a useful framework for effective decision-making based on stakeholder consensus based on shared objectives, solutions, with in turn will enhance support for the plan. Working with stakeholders provides a means to carry out planning activities despite increasingly limited time, funding, and personnel. Partnerships with stakeholders provides agencies with access to expertise and resource that may not be available. These partnerships can create a sense of ownership of the public resource that can increase their sense of stewardship. Lastly, collaborative planning can build social capital, which is the improvement of skills, knowledge, and relationship among stakeholders. This can increase the capacity of the agency, organizations, and community to confront future challenges (Gunton & Day, 2003; Wondolleck & Yaffee, 2000).

Despite the considerable strengths of collaborative planning, there a few weaknesses that must be overcome. The stakeholder groups that are willing and able to participate in the process may not be representative of all stakeholder interests. Access to funding is particularly important to ensure a wide range of stakeholder participation. There may also be conflict over objectives and solutions. This is problematic because reaching a consensus may result in the adoption of

second best solutions. Inflexibility and procedural obligations may also hinder the effectiveness of collaborative planning initiatives. Agency leaders have been resistant to give up control of decision-making, as agencies have clung to their traditional roles (Wondolleck & Yaffee, 2000; Gunton & Day, 2003). Lachapelle *et al.* (2003) have also identified lack of trust and power imbalances between agency, organizations, and the public as dominant barriers to effective collaborative planning in messy situations. Yaffee and Wondolleck (2003) state that agency staff do not possess the skills (e.g., interpersonal skills, win-win problem solving) to lead collaborative planning initiatives and confused by their role (e.g., decision-maker versus another stakeholder).

### **3.3 Linking Visitor Management Planning and Ecological Integrity**

The *PPCRA* (2006) explicitly states that ecological integrity “shall guide all aspects of planning and management of Ontario’s system of provincial parks and conservation reserves.” The *PPCRA* (2006) defines ecological integrity as “a condition in which biotic and abiotic components of ecosystems and the composition and abundance of native species and biological communities are characteristic of their natural regions and rates of change and ecosystem processes are unimpeded.” This is an extremely difficult goal for Ontario Parks as many provincial park boundaries were delineated based on recreational, not ecological objectives. Despite calls from conservation organizations, such as the Canadian Parks and Wilderness Society (CPAWS), to include a guiding principle requiring a greater park ecosystem-based approach to management in the provincial park legislation, it was left out of the *PPCRA* (2006). For example, provisions in the legislation that would require greater ecosystem studies, establishment of buffers around and linkages between parks, and the active involvement of park staff in land use planning exercises beyond park boundaries, were called for by Bell (2002). To

maintain ecological integrity, the park boundaries should encompass an area that is sufficiently large to support a minimum viable population of the most space-demanding species in the region (Theberge & Theberge, 2009). In the case of APP, the parks boundaries deviate from the optimal and the result is severed watersheds and partial animal population ranges (e.g., the Eastern Wolf) (Wilton, 2000). In the absence of the greater park ecosystem principle in the *PPCRA* (2006), Ontario Parks' jurisdiction is essentially limited to planning and managing to mitigate or eliminate internal threats to ecological integrity. Hendee, Stankey, and Lucas (1990) explain that park management is essentially the management of human use and influence to preserve the natural environment. Lucas and Krumpal (1986) agree and state that "managing wilderness resources is largely a matter of managing use, mainly recreational use, to protect resources and to provide visitors opportunities for quality wilderness experience" (p. 122). Since recreation is the dominant land-use within provincial parks (with the exception of logging in APP), park management should focus on mitigating or eliminating visitor-related ecological impacts.

The first State of Ontario's Protected Areas Report (2011) identified visitor impacts as one of the known threats to the maintenance or restoration of ecological integrity. Now that visitor impacts have been identified as a known internal threat to the maintenance of ecological integrity of Ontario's provincial parks, Ontario Parks is required to take action to mitigate or eliminate visitor-related impacts. This means that VMP shall be guided by the maintenance of ecological integrity. Acknowledging that recreational use will inevitably result in impacts, Ontario Parks should undertake VMP to set desirable resource and social conditions, select indicators, inventory existing resource conditions, specify standards for monitoring resource and social conditions, undertake monitoring, and identify management strategies and tactics to

address discrepancies. The wicked problems and messy situations that characterize VMP in protected areas make executing strategic planning a formidable challenge. This may account for the absence of strategic VMP, even in parks with a staggering number of visitors, such as APP. Ontario Parks must take immediate management action to minimize visitor impacts. It is important to understand visitor-related impacts are a function of the amount of use and type, behaviour of users, timing of use, resistance and resilience of the environment and spatial distribution of use (Cole, 2004).

## Chapter 4: Human Use Impacts and Management

### 4.1 Visitor Impacts

This chapter explores the ecological impacts associated with outdoor recreation. A substantial volume of research has been dedicated to examining, assessing and monitoring the ecological impacts associated with visitor use in protected areas; this field of study is referred to as recreation ecology (Marion, 1998). Numerous studies have confirmed that outdoor recreation is not a non-consumptive use of the natural environment; indeed, outdoor recreation inevitably affects the soil, vegetation, animals, and water bodies in the environment in which the activity occurs. Ecological impacts can be understood as direct and indirect. Direct impacts are observed changes which are a direct result of recreational use, while indirect impacts are observed changes which are a result of the inter-related nature of many outdoor recreation impacts (Hammitt & Cole, 1987). For example, soil compaction is a direct result of trampling and can also indirectly cause increased runoff, sedimentation of receiving water bodies, and simplification of plant communities. Table 4.1 provides a comprehensive summary of common ecological impacts resulting from outdoor recreation.

*Table 4.1: Common Ecological Impacts Caused by Outdoor Recreation*

Ecological Components				
	Soil	Vegetation	Wildlife	Water Bodies
Direct effects	Soil compaction	Reduced height and vigor	Habitat alteration	Introduction of exotic species
	Loss of organic litter	Loss of ground vegetation cover	Loss of habitats	Increased turbidity
	Loss of mineral soil	Loss of fragile species	Wildlife harassment	Increased nutrient inputs
		Loss of trees and shrubs	Modification of wildlife behaviour	Increased levels of pathogenic bacteria
		Tree trunk damage	Displacement from food, water	Altered water quality

		Introduction of exotic species	and shelter	
<b>Indirect effects</b>	Reduced soil moisture	Altered microclimate	Reduced health and fitness	Reduced health of aquatic ecosystems
	Reduced soil pore space		Reduced reproduction rates	Composition change
	Accelerated soil erosion	Accelerated soil erosion	Increased mortality	Excessive algal growth
	Altered soil microbial activities			

Source: Adapted from Leung & Marion, 2000.

The most commonly observed visitor-related ecological impacts in APP are campfire-related, including trampling vegetation while collecting firewood, cutting down live tree limbs or entire trees for firewood, building multiple fire sites, and partially burned logs. The second most commonly observed visitor-related impact is litter. Trampling of vegetation along portages and canoe landings, water pollution, built structures (e.g., tables, benches), wildlife harassment and disturbance, and fishing (e.g., over fishing, use of barbed hooks) were among the most commonly cited examples of visitor-induced impacts that were identified during interviews with canoe guides in APP.

*Figure 4.1 Trees Cut Down by Visitors for Firewood in APP*



Photo source: L. King, 2011

The magnitude of change to the environment is a function of the amount of use and type, behaviour of users, timing of use, and resistance and resilience of the environment (Cole, 2004). Research has shown that the relationship between the amount of use and impacts are non-linear. Frissell and Duncan (1965) and Merriam and Smith (1974) were among the first to document this relationship on campsites in the Boundary Waters Canoe Area (BWCA), in Minnesota. They found that soil, vegetation, water quality, and campsite size impacts were greatest after initial use and then leveled off a two-year period. This means that the greatest amount of change occurs after minimal use and remains fairly stable after a two-year period.

The relationship between impact and type of use also varies greatly. Research shows that the types of impacts caused by different user groups. For example, the impacts of campers who have campfires and those that forego them (Cole & Dalle-Molle, 1982); horseback riders and hikers (Wilson & Seney, 1994); and hikers with and without dogs (Miller, Knight & Miller, 2001) can be substantially different. There can also be significant differences among hikers depending on their values, beliefs, and attitudes.

The types of impacts are also a function of the timing of use. Depending on the season and weather conditions ecological impacts can be increased or decreased. DeLuca, Patterson, Freimund, and Cole (1998) found that trail erosion is often greater when soils are wet than when they are dry. Knight and Cole (1995) found that wildlife may respond to disturbances from recreationists by abandoning their nest or young, or leaving their offspring more susceptible to predation. Outside of the breeding season, wildlife that is disturbed during critical feeding periods, such as before hibernation, are more susceptible to starvation and death (Goodrick & Berger, 1994).

Another factor affecting visitor impact is the ability of the environment to withstand change. Wagar (1964) was the first to use controlled experiments to determine the relationship between visitor use and site factors. A site's resistance and resilience are important determinants of the site's durability and susceptibility to visitors' impacts. Hammitt and Cole (1987) state that "resistance is the site's ability to tolerate recreational use without changing or being disturbed" and "resilience is the ability to recover from any changes that do occur" (p. 143). Important factors that determine the resistance and resilience of a site are the vegetation characteristics (e.g., individual species, vegetation cover); soil characteristics (e.g., soil texture, organic matter,



moisture); topographic characteristics (e.g., slope steepness, elevation); and ecosystem characteristics (e.g., successional stage) (Hammitt & Cole, 1987).

These findings have profound implications for park management. The relationships between cause-effect of visitor-induced impacts are complex and non-linear. The magnitude of visitors impacts are a function of multiple factors (Cole, 2004). Park management can effectively mitigate these adverse impacts on the natural environment and visitor experience through the use of management strategies and tactics. Visitor management is a client-oriented approach to planning and management that considers the visitors' needs, expectations, and satisfaction (Eagles, McCool & Haynes, 2002). The main features of visitor management strategies and tactics in parks include control, direction, and mitigation of visitor impacts (Eagles *et al.*, 2002).

## **4.2 Visitor Management Strategies and Tactics**

In the 1970s, a number of visitor management strategies and tactics were developed and incorporated into visitor management, in order to mitigate or eliminate visitor impacts, such as vandalism, litter, tree damage, and harassing wildlife (Freimond & Cole, 2001). Visitor management strategies can be understood as broad conceptual approaches to the achievement of desirable resource and social conditions (Cole, Petersen & Lucas, 1987). Visitor management strategies can be divided into four broad categories: managing the supply of visitor opportunities, managing visitor demand, modify visitor behaviour, or modifying the environment (Eagles, McCool & Haynes, 2002). Cole *et al.* (1987) identified eight visitor management sub-strategies that park agencies can utilize to mitigate or eliminate visitor-related impacts. Table 4.2, Strategies and Tactics for Managing Outdoor Recreation, outlines the common visitor

management strategies and tactics that may be employed by protected area managers to mitigate or eliminate visitor impacts.

*Table 4.2: Strategies and Tactics for Managing Outdoor Recreation*

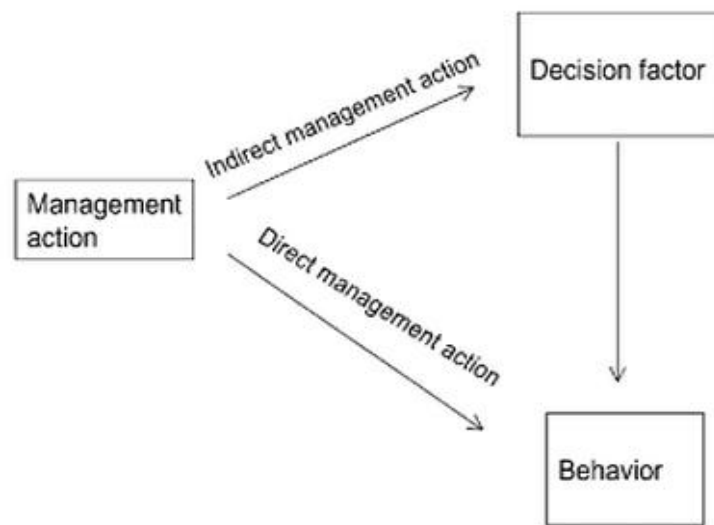
<b>Strategy</b>	<b>Tactic</b>
1. Reduce use of the entire wilderness	<ul style="list-style-type: none"> <li>1. Limit number of visitors in the entire wilderness</li> <li>2. Limit length of stay in the entire wilderness</li> <li>3. Encourage use of other areas</li> <li>4. Require certain skills and/or equipment</li> <li>5. Charge a flat visitor fee</li> <li>6. Make access more difficult throughout the entire wilderness</li> </ul>
2. Reduce use of problem areas	<ul style="list-style-type: none"> <li>7. Inform potential visitors of the disadvantages of problem areas and/or advantages of alternative areas</li> <li>8. Discourage or prohibit use of problem areas</li> <li>9. Limit number of visitors in problem area</li> <li>10. Encourage or require a length-of-stay in problem areas</li> <li>11. Make access to problem area more difficult and/or improve access to alternative areas</li> <li>12. Eliminate facilities or attractions in problem areas and/or improve attractions in alternative areas</li> <li>13. Encourage off-trail travel</li> <li>14. Establish differential skill and/or equipment requirements</li> <li>15. Charge differential visitor fees</li> </ul>
3. Modify the location of use within problem areas	<ul style="list-style-type: none"> <li>16. Discourage or prohibit camping and/or stock use on certain campsites and/or locations</li> <li>17. Encourage or permit camping and/or stock use only on certain campsites and/or locations</li> <li>18. Locate facilities on durable sites</li> <li>19. Concentrate use on sites through facility design and/or information</li> <li>20. Discourage or prohibit off-trail travel</li> <li>21. Segregate different types of visitors</li> </ul>
4. Modify the timing of use	<ul style="list-style-type: none"> <li>22. Encourage use outside of peak use periods</li> <li>23. Discourage or prohibit use when impacts potential is high</li> <li>24. Charge fees during periods of high use and/or high impact potential</li> </ul>
5. Modify type of use and visitor behaviour	<ul style="list-style-type: none"> <li>25. Discourage or prohibit particularly damaging practices and/or equipment</li> <li>26. Encourage or require certain behaviour, skills and/or equipment</li> <li>27. Teach a wilderness ethic</li> <li>28. Encourage or require a party size and/or stock limit</li> <li>29. Discourage or prohibit stock</li> <li>30. Discourage or prohibit pets</li> <li>31. Discourage or prohibit over-night use</li> </ul>
6. Modify visitor expectations	<ul style="list-style-type: none"> <li>32. Inform visitors about appropriate wilderness uses</li> <li>33. Inform visitors about conditions they may encounter in the wilderness</li> </ul>

7. Increase the resistance of the resource	34. Shield the site from impact 35. Strengthen the site
8. Maintain or rehabilitate the resource	36. Remove problems 37. Maintain or rehabilitate impacted locations

Source: Adapted from Cole *et al.*, 1987

To implement these broad visitor management strategies, a multitude of visitor management tactics have been developed. Visitor management tactics can be understood as the direct actions or tools applied by managers to accomplish management strategies (Manning, 2011). Cole *et al.* (1987) identified 37 visitor management tactics that can be applied to reduce or eliminate visitor-related impacts. Table 4.2, Strategies and Tactics for Managing Outdoor Recreation, outlines common visitor management tactics. Management tactics can be direct or indirect. Direct management tactics impose restrictions on visitor behaviour and access to the park, such as limiting use or imposing fines (Manning, 2011). In contrast, indirect management tactics seek to influence the behaviour of visitors, such as low-impact education or improve access to certain areas (Manning 2011). Figure 4.2 illustrates the conceptual difference between direct and indirect outdoor recreation management practices.

Figure 4.2 Direct versus Indirect Management Tactics



Source: Peterson and Lime, 1979

In the 1970s, park management began limiting use in popular wilderness parks, such as Yosemite National Park and Boundary Waters Canoe Area (BWCA), in order to curb the deterioration of the natural environment (Freimund & Cole, 2001). This earlier approach to visitor management is based on the theory of carrying capacity. The difficulty of establishing a numerical carrying capacity that would safeguard the resource and social conditions became apparent as conditions in parks continued to deteriorate (e.g., Eagles *et al.*, 2002; Godin and Leonard, 1977). In a landmark study, Cole (1987) determined that the relationship between the level of use and impacts was non-linear. These, and other findings, triggered a shift in the type of visitor management tactics employed by park agencies. Instead of limiting the number of visitors, visitors were dispersed across the parks, in order to reduce visitor impacts (Cole, 1981). By the 1980s, the limitations of the use dispersal tactic also became apparent as visitor impacts were spread across the park. This led to the use of indirect visitor management tactics, such as low-impact education, to halt the deterioration of the natural environment (Bradley, 1979). The

1980s witnessed support for less restrictive, indirect management tactics as they promised to reduce visitor impacts without restricting the amount of use. By the 1990s, this trend reversed again. Park agencies move towards limiting use as park visitation continued to increase, instead of decrease or remain steady. Despite the use of low-impact education, visitor impacts have spread across many parks and threaten to undermine the natural and cultural values that the park was set aside to protect. Freimund and Cole (2001) argue that “use density is increasing faster than per capita impacts are decreasing and, therefore without use limits, social and ecological impacts will increase endlessly” (p. 4). However, this directly refutes earlier findings that initial use results in the greatest amount of impacts, which level out after approximately two-year period.

The advantages and disadvantages of direct and indirect visitor management tactics have been debated within academic and park agency literature. Bradley (1979) states that a purely regulatory approach is inappropriate for managing recreational impacts because: 1) regulations antagonize the public rather than gain their support, 2) most impacts are not from malicious acts, they are the result of unskilled and uninformed actions, and 3) enforcement of regulations is challenging in large and remote protected areas. Peterson and Lime (1979) and McCool and Christensen (1996) believe that indirect management have been favoured over direct management tactics when and where they are believed to be appropriate, particularly in wilderness areas. Hammitt and Cole (1998) stated that limiting use (a direct management tactic) should be used only as a last resort. Hendee, Stankey and Lucas (1990) and Hammitt and Cole (1998) argue that direct management tactics may also detract from the visitors experience and inhibit visitor opportunities. Direct management tactics may be viewed by visitors as restricting the freedom of choice in both thought and action, which is contradictory to the very nature of

outdoor recreation (Manning, 2007). Furthermore, Lucas (1983) found that given a choice, visitors prefer indirect over direct management practices. Manning (2007) states that indirect management tactics are also less costly due to the absence of the need for enforcement of rules and regulations. Finally, Hammitt and Cole (1987) made the persuasive argument that without low-impact education, visitor impact management will remain reactionary. Park managers must move beyond treating the symptoms and began to treat the cause of visitor-related ecological impacts.

The perception that indirect management practices are preferable to direct management practices has been contested within the literature. Dustin and McAvoy (1984) argue that direct management approaches will actually lead to more freedom instead of less, as conditions may deteriorate more rapidly without direct visitor management action, resulting in campsite or trail closures. Hammitt and Cole (1998) state that indirect management practices may be ineffective at addressing impacts, such as over-crowding and user conflicts. Indirect management practices may actually led to greater conflict among visitors, as the quality of the natural environment and visitor experience may be compromised by some recreationalists not abiding by voluntary codes of conduct or norms. Manning (2007) believes that there will always be some visitors who will be resistant to indirect management tactics and fail to adopt a new ethic or behaviour without more cohesion. When all visitors are required to conform to a specific behaviour or use certain equipment, management objectives may be more likely to be achieved (Swearingen & Johnson, 1995).

It may be more advantageous to use a combination of direct and indirect management strategies and tactics to mitigate the ecological and social effects of visitor use. In fact, direct and indirect management tactics are not mutually exclusive and can complement each other

(Alder, 1996). For example, banning barbed fishing hooks (direct management tactic) could be implemented in conjunction with an educational program (indirect management tactic) to explain the need to institute the ban. Selecting the most appropriate management strategy and tactics are based on multiple factors. These factors are “political (e.g., publicly acceptable), use-related (e.g., type and amount of use, user behaviour), environmental (e.g., topography, soil, and vegetation type), and managerial (e.g., staffing, funding, policies, regulations)” (Leung & Marion, 1999, p. 34). Prior to selecting the appropriate management strategies and tactics, park agencies should have a clear understanding of the cause and effect of the ecological or social problems.

The APMP (1998) does not contain any explicit policies specifically pertaining to “visitor management” (Eagles & Bandoh, 2009). It is interesting to note that the first management (master) plan for APP was created to resolve conflict that arose between different park users (Friends of Algonquin Park, 2007). Yet, the current APMP (1998) lacks comprehensive visitor management policies. Visitor management is addressed under “Management of recreationalists” section, which is carried out through education and the enforcement of legislation and regulations (MNR, 1998). The APMP (1998) states that “Interior management is aimed at providing back-country recreational opportunities while preserving and perpetuating the characteristics of the Algonquin Interior “wilderness” experience” (p. 37). A “wilderness experience” includes “solitude, natural qualities, and the absence of human, technological or industrial impact, such as roads, garbage and motors” (MNR, 1998, p. 37). According to the APMP (1998), “Interior management strategies are designed to mitigate conflicts between users (such as canoeists and motorboat users) and place controls and regulations on other uses (e.g., forest management)” (MNR, 1998, p. 37). Eagles and Bandoh (2009) identified three major visitor management strategy themes: (1) “wilderness” experience, (2) conflict between users, and

(3) matching demand with supply. These are highly generic outdoor recreation management issues that may be found in any park management plan (Eagles & Bandoh, 2009). They do not pertain to specific visitor management issues in APP. The APMP (1998) is an example of top-down, command-and-control approach to visitor management. The APMP (1998) simply outlines the rules and regulations governing recreationists in APP. The principle means of communicating the extensive set of rules and regulations to park users is print material, such as park newsletter, signs, and maps. Park wardens and conservation officers are supposed to enforce the rules and regulations; however, park wardens and conservation offices are very scarce in APP. In 2010, there were three conservation officers patrolling APP (MNR, 2010), to enforce park legislation and regulations for 335,879 camper nights. Eagles and Bandoh (2009) point out that the management planning process in Ontario's provincial parks is typically undertaken as a land-use planning exercise using maps to identify resources and activities within the boundaries. Unfortunately, this approach is weak in regards to many important aspects of park management, such as visitor management.

The APMP (1998) also does not explicitly contain any policies pertaining to "management tactics," although a number of "prohibited" and "permitted" activities are outlined under the "Management of recreationalists" section of the APMP (1998). For example, limiting use, limiting party size, limiting the length of stay, charging a visitor fee, and segregating different types of users are some examples of visitor management tactics that park management employ to maintain the "wilderness" experience, reduce conflict between users, and match supply with demand. It is evident from these examples that APP management favours direct visitor management tactics over indirect visitor management tactics. To maintain the desired resource and social conditions in APP, indirect visitor management tactics, such as encouraging



certain behaviours, skills and equipment, teaching a wilderness ethic, informing visitors about appropriate, and wilderness uses, may be used to provide exceptional “wilderness” experiences and preserve the integrity of the natural environment. A low-impact camping skills interpretation program that encourages visitors to adopt a wilderness ethic and modify their own behaviours may be a more effective visitor management tactic to maintain these conditions with the park.

### **4.3 Interpretation as a Visitor Management Tactic**

Many scholars argue that interpretation can be a very effective visitor management tool (e.g., Hendee & Dawson, 2002; Jones, 1992; Manning, 2003; Marion & Reid, 2007; Roggenluck, 1992). Park management can use interpretation to minimize visitor impacts on the natural environment, reduce conflict between users, and decrease enforcement costs (Hendee & Dawson, 2002), by promoting an enhanced wilderness ethic and encouraging a self-directed modification of the visitors own behaviours (Manning, 1999). Low-impact camping skills interpretation is based on the assumption that most visitor-related impacts are not the result of malicious acts, but rather unskilled and uninformed actions (Bradley, 1979). The objective of low-impact camping skills interpretation is not to control the visitors’ behaviour, but to persuade visitors to adopt low-impact camping practices.

Tilden (2007) defines interpretation as “an educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information” (p. 33). It is important to make the distinction between interpretation and information. Interpretation differs significantly from information in two fundamental ways. First, interpretation is based on information, but information is not interpretation. Second, the chief aim of interpretation is

provocation, not instruction (Tilden, 2007). Interpretation is meant to move us, not teach us (Ham & Weiler, 2003). The true intent of interpretation is to move beyond recall of facts in post-program surveys. Instead, it is meant to affect the participants “knowing, feeling and doing outcomes” (Ham & Weiler, 2003, p. 5).

In the context of protected areas, Eagles, McCool, Haynes (2002) state the three fundamental goals of interpretation are: 1) promote management goals, 2) promote understanding of the agency, and 3) improve understanding of protected areas. Table 4.3 highlights these goals. Marion and Reid (2001) agree and believe that effective interpretation should enhance the visitors’ outdoor ethics and encourage visitors to modify their own behaviour through the adoption of low-impact practices. Later, Marion and Reid (2007) refine the goals of interpretation to include knowledge gain, behavioural change, redistribution of visitors, and change in resource condition.

*Table 4.3 Common Park Interpretation Goals*

<b>Goal</b>	<b>Comments</b>
Management goals	<ul style="list-style-type: none"> <li>• Provide information to visitors on management policies</li> <li>• Direct behaviour towards acceptable practices</li> <li>• Encourage behaviour that minimizes negative environmental impacts and maximizes positive</li> </ul>
Promote understanding of agency	<ul style="list-style-type: none"> <li>• Assist with creating positive public relations for the agency</li> <li>• Develop positive public attitude towards protected area agency, staff members, policies and management</li> <li>• Assist park management in carrying out new policy initiatives</li> </ul>
Understanding the park	<ul style="list-style-type: none"> <li>• Develop awareness, appreciation, and understanding of park cultural and natural heritage</li> <li>• Develop heightened visitor satisfaction with recreation experience</li> </ul>

Source: Adapted from Sharp, 1976

APP’s Natural Heritage Education Program (NHEP) is comprised of three components: information, interpretation and recreational skills development (MNR, 1998). The NHEP describes the natural heritage program facilities, programs, and service as well as future

strategies and initiatives (MNR, 1998). The aim of the information component of the NHEP is to provide information on APP's facilities, activities, services, rules and regulations, management, recreational opportunities, and unique attractions, through non-personal (e.g., publications) and personal contact (e.g., interaction with conservation officers) (MNR, 1998). The principal means of disseminating information is likely the annual *Algonquin Information Guide* and the park's newsletter, *The Raven*, that publishes six issues a year (Friends of Algonquin, 2012e), that are available at the main park gates and most interior access points. The intent of the interpretation component of the NHEP is to enhance visitors understanding, appreciation, and enjoyment of APP (MNR, 1998). The four major interpretative themes were geology and geomorphology, flora and fauna, human history, and the Algonquin "wilderness" (MNR, 1998). APP's staff and volunteer interpreters offer a variety of interpretative programs in the summer. Table 4.4 displays the interpretative program and the number of visitors that attended that program or event. It is evident that park management measures fulfilment of the heritage appreciation objective by the number of visitors that participated in the interpretation programs. This is a weak indicator when measuring the fulfilment of this objective as participation in the interpretation programs does not provide any insight into the visitors' level of knowledge and appreciation of APP. Eagles and Bando (2009) argue that Ontario Parks must measure the knowledge increase and level of appreciation of visitors to ensure that they are fulfilling their policy requirements and legislation obligations.

Table 4.4 Participation in Summer Interpretative Programs in APP

Interpretive Program	Number of Visitors Attended
Out-of-Park Programs	
Extension	372
Programs for Groups	
School Groups	2,914
Other Groups	2,832
Programs for Public	
Guided Walks	3,869
Evening Programs	7,340
Film Nights	47
Campfires	-
<u>Outdoor Recreation Skills</u>	-
Children's Programs	4,952
Special Events	4,228
Interpretive Roving	10,227
Other	-
Campsite Visitation	-
Promotion and General Information	30
Indoor Facilities	
Visitor Centre	172,469
Other	30,000
Outdoor Self-Use Facilities	
Signs/Exhibits	-
Interpretative Trails	179,960
Other Trails	-
Interpretive Publications	
Park Specific	109,115
Total	419,240

Source: Adapted from MNR, 2010, p. 58

The last component of the NHEP is directed towards developing visitors outdoor recreation skills, in order to enhance their enjoyment of APP (MNR, 1998). Outdoor recreation skills were taught through slide shows and films, guided hikes, publications, and special events (e.g., canoe demonstrations) (MNR, 1998). However, the 2010 Ontario provincial park statistics reveals that there were no “outdoor recreation skills” programs delivered to the public in APP (MNR, 2011). Currently, park management is failing to execute a critical component of the NHEP by their failure to provide any opportunities for visitors to develop their outdoor

recreation skills. The absence of outdoor recreation skills programs may be attributed to the reduction in government funding and the subsequent reduction in Ontario Parks' staff. It appears that park management lacks the capacity to execute the third component of the NHEP. Ontario Parks should supplement dwindling budgets and staff by using standing committees, associations, and "friends of" groups to assist in setting policy, planning and managing parks (Selin & Chevez, 1995), such as park interpretation. Currently, The Friends of Algonquin Park group assists in delivering park interpretation; however, the type, extent, and messages being delivered by the group is not clearly outlined in the APMP (1998).

#### **4.3.1 Leave No Trace Education Program**

Witnessing the deteriorating conditions of APP interior resources, Algonquin Backcountry Recreationalists (ABR), a non-governmental organization, comprised of concerned back-country recreationalists dedicated to preserving, protecting, and enhancing the wilderness-like experience in the back-country of APP, took it upon themselves to develop Leave No Trace (LNT) for APP principles, in partnership with LNT Canada (ABR, 2010). In collaboration, ABR and LNT Canada published LNT principles for the back-country of APP in 2010 (ABR, 2010). A year later, ABR entered into a Memorandum of Understanding with APP management and The Friends of Algonquin Park to promote and encourage visitors to practice LNT principles in APP (ABR, 2011). The parties have agreed to work collaboratively to promote the LNT principles in APP through the use of print media, internet, and video (ABR, 2011). This means APP has become the first provincial park in Ontario to officially adopt the LNT program (LNT Canada, 2011).

The LNT program was developed in 1987 by the US Forest Service (USFS), Bureau of Land Management (BLM), and US National Park Service (NPS) to address the deteriorating

resource conditions of parks (Marion & Reid, 2001). The impetus for the development of LNT program was the initial success of the USFS mid-1970s Wilderness Information Specialists program, with park officers providing visitors with no-trace travel and camping tips (Marion & Reid, 2001). The LNT program strove to educate recreationalists about the nature of their recreational impacts as well as techniques to prevent and minimize these impacts (LNT Canada, 2011). The LNT is not a set of rules and regulations; rather, the LNT principles are meant to provide outdoor recreationalists with a framework for selecting appropriate behaviour for the type of conditions encountered while traveling and camping in wilderness. The LNT program is intended for non-motorized outdoor recreation, although it was initially intended for back-country outdoor recreational activities, the program has been adapted to front-country setting. The current seven LNT principles are:

1. Plan Ahead and Prepare
2. Travel and Camp on Durable Surfaces
3. Dispose of Waste Properly
4. Leave What You Find
5. Minimize Campfire Impacts
6. Respect Wildlife
7. Be Considerate of Other Visitors. (LNT Canada, n.d.)

Evidence that LNT principles have been adopted by APP remains sparse. In accordance with the Memorandum of Understanding, LNT principles are being promoted through print media, internet, and video. As such, the LNT booklet can be downloaded from the ABR and The Friends of Algonquin Park websites; however, it is not available on the official APP website. In terms, of print media, the LNT principles appeared in the *Algonquin Information Guide* and the September issue of *The Raven* newsletter. Figure 4.3 shows the article in *The Raven* newsletter, that explains each LNT principle; however, the LNT principles have been adapted for front-country campers, not back-country campers. The same article appeared in the 2011 *Algonquin*

*Information Guide.* There is currently no print media available for back-country users, which was the initial impetus for developing the APP LNT program. This means that current print media is failing to target back-country recreationalists. The 2011 APP canoe route map was supposed to contain the LNT principles backcountry (Personal communication, October 24, 2011); however, this did not occur. To date, no LNT video has been released to the public on any of the parties websites. It is unclear how a future video would be made available to park visitors, whether it would only be available on-line or if front- or back-country users would be required to watch for video when obtaining their park permit.

Figure 4.3 LNT Article in September Issue of The Raven Newsletter



Source: Friends of Algonquin Park, 2012e

Finally, in spring 2011, licence and contract holders in APP were informed that APP had adopted the LNT program; however, no further communication has been released to licence or contract holders since then (Personal communication, December 8, 2011). Since many of the licence and contract holders provide outfitting and guiding services to visitors, park management



has missed a significant opportunity to require licence and contract holders that provide visitor services to incorporate the LNT program into their services. The wide-spread adoption of the LNT program, which is a form of low-impact camping interpretation, could prove to be an effective visitor management tool that can be used by APP management to reduce visitors' impacts through promoting an enhanced wilderness ethic and self-directed modification of the visitors behaviour.

#### **4.3.2 The Efficacy of Interpretation**

Research regarding the effectiveness of interpretation has increased over the last decade due to a renewed focus on accountability in the public sector and budget cuts in park systems (Dearden & Dempsey, 2004). Studies show that low-impact interpretation programs can indeed reduce visitors' impacts in parks. This section provides an overview of research findings that support the use of low-impact interpretation to protect the natural environment of protected areas and the implications for the successful delivery of the LNT program in APP.

Fazio (1979) found that personal contact is more effective than non-personal contact in conveying low-impact messages to park visitors. The current approach for delivering the LNT program in APP relies exclusively on non-personal contact, which may undermine the overall success of the program if personal contact is not incorporated into the promotion of LNT program. Stewart, Cole, Manning, Valliere, Taylor, and Lee (2000) found that low-impact messages should be tailored to park-specific issues, such as removal of artifacts. These findings suggest that the LNT principles that address issues in APP, such as campfire-related impacts and litter, should be the focus of personal or non-personal contact interpretation program. Cole, Hammond, and McCool (1997) studied the amount of attention that park visitors paid to low-impact messages and found that, as the number of messages increased, the visitors' ability to

recall the message decreased. This study's findings support Stewart *et al.* (2000) findings that the number of messages should be limited, in order to increase the visitor's ability to recall the information.

Boon, Fluker, and Wilson (2008) found interpretation that only appealed to the visitor's reason and intellect were ineffective. This supports Christensen and Cole's (2000) findings that showed that ecological reasons were more compelling arguments than social reasons at persuading visitors to use a camp stove and camp away from lakes. The current print media used to promote the LNT program in APP provides an ecological or social rationale for practicing the LNT principles; however, the rationales provide are very vague and generic. Orams (1995) argues that interpretation should appeal to the cognitive (learning) and affective (attitudes, feelings, value systems) domains of the visitor. The affective domain relates to the visitor's emotional response that interactions with nature engender. Orams (1995) believes that many interpretation programs are based on the misguided premise that the provision of information will increase the visitors knowledge, and in turn affect their behaviour, is untrue. It appears that the current approach to delivering the LNT program in APP is based entirely on the provision of information, which, according to Orams (1995), is ineffective in changing behaviour. These findings are supported by Tubb (2003) and Daniels and Marion (2005).

Tubb (2003) found that after visitors had attended an interpretative program at a visitor centre, visitors were able to identify a specific action they could take to reduce their impact on the park; however, when asked about their intentions to act, there were no significant increase in the visitors' likelihood to act. These findings suggested that knowledge gain does not necessarily lead to behaviour change. Tubb (2003) suggests that a more hands-on approach to learning low-impact skills is required. Daniels and Marion (2005) found that participants that

had completed a two-day LNT Trainer course showed a significant improvement in short- and long-term knowledge and ethics, but there was no correlation between knowledge and behaviour change. This suggested that information alone may not be the most important tool in promoting appropriate behaviour. Daniel and Marion (2005) recommends using moral appeals that emphasized the need and reasons for certain practices, the benefits to the environment, the individual and others, to increase the likelihood of increased knowledge resulting in positive behaviour change. These studies confirm that information can increase visitors' knowledge, but not necessarily lead to a change in behaviour.

Armstrong and Weiler (2002) claim there were very few published studies that examine messages delivered by tour operators in protected areas. To fill this gap in research, Armstrong and Weiler (2002) examined messages delivered by tour operators in national parks in Victoria, Australia to determine their consistency with park management objectives. The authors found that all of the 20 tour operators in the study delivered at least some messages that were consistent with park management objectives. The most frequently delivered message to tour participants were low-impact messages; however, very few participants were able to recall these messages after the tour. Armstrong and Weiler (2002) recommend that the style, structure, and content of the interpretation delivered by the tour operators should be structured thematically and increased frequency.

This study revealed that tour operators can contribute to delivering messages that further park management objectives, although the way the message is delivered should be thematically structured and repeated. This challenges the traditional role played by tour operators. Cohen (1985) first conceptualized the four traditional roles of the guide: instrumental (e.g., safety, navigating), interactional (e.g., representing the area), social (e.g., building group morale), and

communicative (e.g., disseminating correct information) roles. Weiler and Davis (1993) expanded upon Cohen's (1985) work and added two more roles, including motivator (e.g., modify the visitors behaviour) and environmental interpretation (e.g., increase the visitors understanding and appreciation of the environment). McArthur (1994) found that tour guides may underestimate the importance that visitors attach to environmental interpretation. The author found that guides use of interpretation is influenced by their personal experience, familiarity with the area, and passivity of the activity.

Randall and Rollins (2009) examined visitors' perception of the role of tour guides in Pacific Rim National Park Reserve in British Columbia. The authors found that visitors rated environmental communicator and motivator of responsible behaviour of the highest importance; however, tour guides typically embodied instructional and mediator roles. Even though tour participants expressed a keen desire to increase their knowledge and awareness of the national park reserve, only a few guides mentioned the term "leave no trace" and there was no discussion by any guide about the importance of not removing First Nations artifacts, which is a significant park-specific issue. This study highlights the changing visitor perceptions of the role of tour operators in protected areas, from instructor to educator. The tour guides interviewed for this research described their primary roles as instrumental and environmental interpretation. However, the researcher observed tour guides embodying instrumental and social roles on canoe trips.

There are very few studies that assess the change in site conditions following an interpretive program, which would in turn reveal whether actual behaviour were, or were not modified by knowledge gained through interpretation. Oliver, Roggenbuck, and Watson (1985) evaluate the effectiveness of three educational approaches used to reduce tree damage and litter

in a campground. The educational methods used were a brochure; a brochure and contact with a ranger; and a brochure, contact with a ranger and requesting visitors to report any destructive acts or damage observed by the camper. The study shows that distributing the brochure reduced the percentage of campers who damaged at least one tree from 39% to 20% and leaving behind at least one piece of litter from 82% to 66%. Combining the brochure with contact with a ranger further reduced the incidents of tree damage to 4% and littering to 41%. Interestingly, the combination of brochure-plus-personal contact-plus-self-reported damage were less effective than brochure-plus- personal contact (Oliver *et al.*, 1985). This study shows that personal contact, rather than just non-personal contact, greatly reduced negative visitor behaviours and in turn significantly reduced visitors' impacts on the natural environment. This study highlights the importance of personal contact in influencing visitors to change behaviour.

Littlefair (2004) assesses the effectiveness of interpretation delivered on guided hikes, led by a commercial tour operator, through measuring actual environmental impacts. Littlefair (2004) found that environmental interpretation should use both verbal appeals (e.g., pick up waste you see) and role modelling (e.g., the guide picking up waste) of appropriate behaviours, in order to effectively alter visitors' behaviour. This research shows that telling and showing visitors appropriate behaviours is required to reduce actual environmental impacts.

These studies show that low-impact interpretation can be an effective visitor management tool that can be used to reduce visitor related impacts in protected areas. The structure, content, and delivery of low-impact interpretation is extremely important factors that influence the visitors knowledge gain and more importantly, change in behaviour. Based on the research findings, personal contact is far more effective than non-personal contact interpretation. The number of low-impact messages delivered through personal or non-personal channels should be

limited, in order to increase the visitors' ability to retain the information. Given the limited number of messages, research suggests that messages should be tailored to address park specific issues, such as litter and campfire-related impacts. However, knowledge gain will not necessarily lead to behaviour change. In order to increase the likelihood of behaviour change, visitors should be provided with the ecological rationale, as opposed to the social rationale. In addition, emotional appeals instead of reason appeals are also more effective means of persuading visitors' to change their behaviour. Research shows that verbal or written appeals coupled with modeled behaviour greatly reduces negative visitor behaviour, such as littering. The modeling of appropriate behaviour reduces the visitors uncertainty about the appropriate actions needed to reduce their impacts. Finally, tour operators can play a significant role in delivering park interpretation as their roles are expanding from instrumental (e.g., leadership, safety) to environmental interpreter and motivator of appropriate behaviour. Tour guides go far beyond providing information to their clients: they grant access to areas, build group morale, mediate between clients, teach new skills, model behaviours, and tell stories. Thus, in addition to providing safety and providing information, tour guides have an important role to play in influencing visitors' knowledge and behaviour as well as the visitors' beliefs, values, and attitudes towards the protected area.

## Chapter 5: Case Study Description

### 5.1 Algonquin Provincial Park

APP was selected as the representative case study for this research. Founded in 1893, Algonquin was the first provincial park<sup>2</sup> in Canada. The creation of APP was led by Alexander Kirkwood, a public servant with the Department of Crown Lands, who called upon the Commissioner of Crown Lands, Honorable T.B. Pardee, to create a “Forest Reservation and National Park” for the preservation and maintenance of the natural forest and to protect the headwaters and the tributaries of the Amable du Fond, Muskoka, Petawawa, Bonnechere, and Madawaska Rivers (Saunders, 1963, p. 77). In Ontario, the fallacy of unlimited forests and wildlife entered into the public’s consciousness in the 1880s. As a reaction to this emergent issue, a consortium of minor civil servants, anglers and hunters, naturalists, loggers, urban intellectuals, and politicians advocated for the creation of APP for watershed protection, game protection, and recreation (Killan, 1993). Kirkwood had the foresight to include recreation to the list of reasons to establish the park, even though there was no demand for outdoor recreation at the time, as he was sensitive to the increasing urbanism in southern Ontario (Killan, 1993). He wrote that “Seekers for the health and pleasure in the summer season may be allowed to lease locations for cottages and tents on the shores of the Great Opeongo Lake, and a site on that lake for a hotel and farm” (Killan, 1993, p. 10). The Park’s original purpose statement reflected the multiple-use paradigm that dominated park establishment. APP was established as “a public park, and forest reservation, fish and game preserve, health resort and pleasure ground for the benefit, advantage and enjoyment of the people of the Province” (Saunders, 1963, p. 85). From

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<sup>2</sup> Algonquin Provincial Park was designated in 1893 as Algonquin National Park under the Algonquin National Park Act. “Function and size, not political jurisdiction, seem to have been the determining factors in designating Algonquin as a national park” (Killan, 1993, p. 16). The Park’s name was changed in 1913 to Algonquin Provincial Park (Friends of Algonquin Park, 2012a).

the creation of APP during Ontario's settlement era, it was clear that APP had to fulfill multiple, often competing and conflicting, uses of logging, recreation, and conservation.

### 5.1 .1 Ecoregion and Ecodistricts

APP is located on the Precambrian Shield, between the Georgian Bay and the Ottawa River, in the province of Ontario (MNR, 1998). Figure 5.1 shows the location of APP in the province of Ontario, Canada.

*Figure 5.1 Provincial Context*



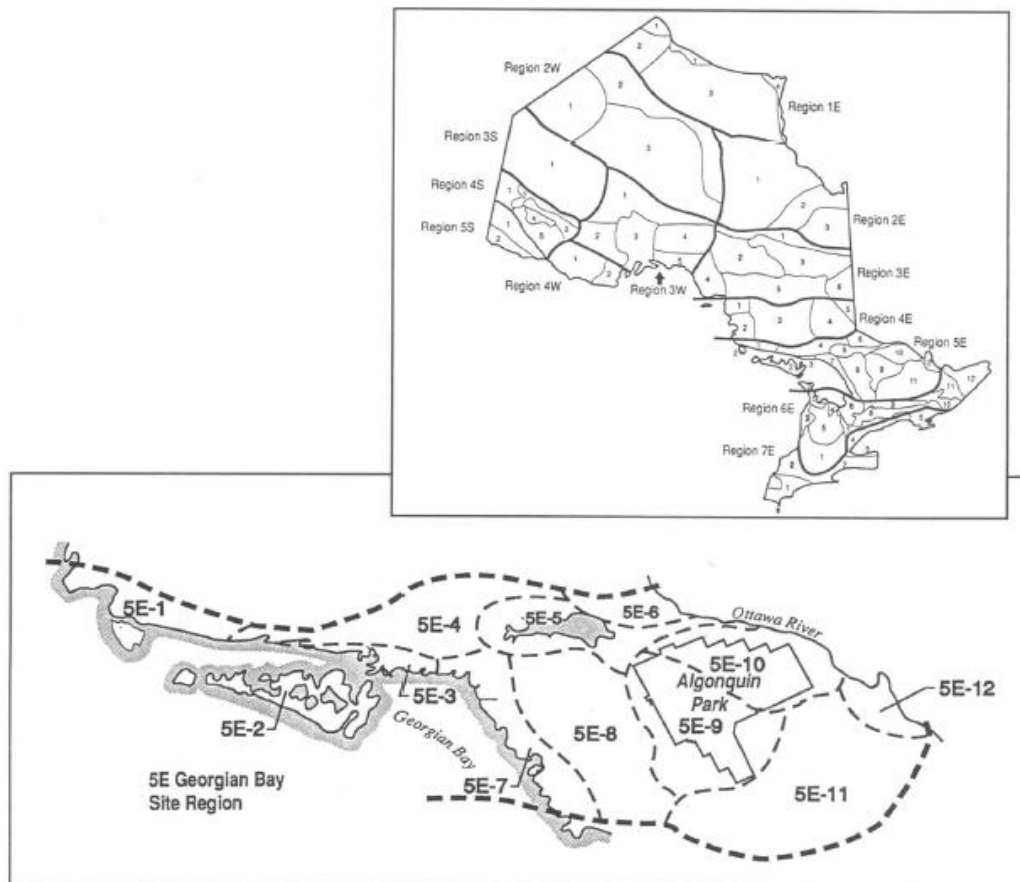
Source: Ministry of Natural Resources, 1998, p. 3

APP encompasses 772,300 ha of provincially significant natural and cultural heritage. Within the Ontario provincial parks classification system, APP is representative of the Georgian Bay Site (5E) ecoregion and both the Algonquin Park Site ecodistrict (5E-9) and Brent Site



ecodistrict (5E-10) (MNR, 1998). Figure 5.2 shows the ecoregion and ecodistricts that APP occupies.

*Figure 5.2 Ecoregion 5E and Ecodistricts 5E -9 and 5E-10 of APP*



Source: Ministry of Natural Resource, 1998, p. 4

The Georgian Bay Site (5E) is one of Ontario’s twelve ecoregions (MNR, 2011). “Ecoregions are unique areas of land and water nested within an ecozone that are defined by a characteristic climate range and pattern, including temperature, precipitation and humidity” (MNR, 2011, p. 10). The Algonquin Dome, a raised dome of slightly rolling Precambian Shield bedrock, significantly affects the climatic patterns in APP. As a result, APP experiences colder winters than surrounding areas, with seasonal temperature fluctuations ranging from 30 °C in the summer and –40 °C in the winter (Rommel, 2009). Unlike the significant fluctuation in

temperature, precipitation remains fairly constant throughout the year. The monthly mean rainfall is 98 mm (Environment Canada, 2012).

At a finer scale, APP also represents the Algonquin Park Site ecodistrict (5E-9) and Brent Site ecodistrict (5E-10) (MNR, 2011). “Ecodistricts are areas of land and water contained within an ecoregion that are defined by characteristic physical features, including bedrock and/or surficial geological features and topography” (MNR, 2011, p.10). The Algonquin Dome is the source of headwaters for eight major river systems: Amable du Fond, Petawawa, Madawaska, York, Muskoka, Bonnechere, Magnetawan, and South (Rommel, 2009). APP also contains a vast network of 2,456 fresh water lakes that supports numerous fish species (Rommel, 2009). Located in the transitional zone between the Great Lakes and St. Lawrence forest, APP provides habitat for a wide variety of flora and fauna. Table 5.1 summarizes the number of flora and fauna species found in APP.

*Table 5.1 Flora and Fauna Species in APP*

<b>Description</b>	<b>Number of Species</b>
Vascular Plants (native and non-native)	1,049
Trees (native only)	34
Mosses	181
Liverworts	76
Lichens	165
Fungi	1,070
Mammals	47
Birds	277
Insects (estimated)	6,833
Butterflies	82
Dragonflies and Damselflies	85
Fish (native and non-native)	53
Reptiles	14
Amphibians	17

Source: Adapted from Rommel, 2009, p. 29

### 5.1.2 Park Classification

In Ontario, there are six park classes. A provincial park class defines a park's purpose and characteristics as well as distinctive planning, management and visitor services policies (MNR, 1992). APP is classified as a natural environment park. The *Provincial Parks and Conservation Reserves Act* (PPCRA) (2006) states that "The objective of natural environment class parks are to protect outstanding recreational landscapes, representative ecosystems and provincially significant elements of Ontario's natural and cultural heritage and to provide high quality recreational and educational experiences" (c.12, s. 8(5)). This park class provides less ecological protection and promotes more recreational opportunities than the wilderness and nature reserves park classes. The natural environment park class corresponds with the International Union for Conservation of Nature (IUCN) protected area category II - National Park class. IUCN (2012) states:

Category II protected areas are usually large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement species and ecosystem characteristic of the area, which also provide a foundation for environmentally and culturally compatible, spiritual, scientific, educational, recreational and visitor opportunities.

However, 594,860 ha of APP are designated as a Recreation/Utilization Zone, which supports low-intensity recreational activities and commercial logging (MNR, 1998). Under the IUCN park classification system, 77% of APP is only partially protected area and, therefore, does not qualify for designation under the IUCN protected area classification system. According to the IUCN, only 33% of APP is a protected area.

The *Provincial Park Planning and Management Policies* (1993) states that recreation should only be permitted in five of the six zones in provincial parks. However, APP has seven zones to allow for logging. In APP, recreation is permitted in all of the park's zones. Permitting

recreation in the Nature Reserve zone does not conform with the policies in the *Provincial Park Planning and Management Policies* (1993) manual. Permitting recreation in all areas of APP, regardless of the ecological or cultural significance of the area means that recreational use is granted unlimited access to all corner of APP. Table 5.2 shows the area (hectares) of each zone in APP.

*Table 5.2 Zone Type and Area in APP*

<b>Zone Type</b>	<b>Area (ha.)</b>	<b>% of Park Area</b>
Nature Reserve	39,250	5.1
Wilderness	90,475	11.9
Natural Environment	13,765	1.8
Historical	1,680	0.2
Development	22,545	3.0
Access	735	0.1
Recreation/Utilization	594,860	77.9

Source: Ministry of Natural Resources, 1998, p. 13

### **5.1.3 Park Goals and Objectives**

In accordance with Ontario's provincial park legislation and policy, APP's goal, which is aligned with the Park's class, is to:

Provide protection of natural and cultural features, continuing opportunity for a diversity of low-intensity recreational, wilderness, and natural environmental experiences; and within this provision continue and enhance the Park's contribution to the economic, social and cultural life of the region. (MNR, 1998, p. 6)

To fulfil the Park's stated goal, five objectives have been identified:

1. To protect provincially significant elements of the natural and cultural landscape of Algonquin Park.
2. To provide outdoor recreation opportunities ranging from high-intensity day use to low-intensity wilderness experiences.
3. To provide opportunities for exploration and appreciation of the natural and cultural heritage of Algonquin Park.
4. To provide Ontario's residents and out-of-province visitors with opportunities to discover and experience the distinctive regions of Algonquin Park.

5. To practice sustainable resource management in Algonquin Park for the long-term health of the Park’s ecosystems and to provide recreational, cultural and economic benefits. (MNR, 1998, p. 7)

Explicit in APP’s goal and objectives is the provision of outdoor recreation (objective 3.), education (objective 4.), and tourism (objective 5.). The content of these objectives are generic, not specific to APP; therefore, it is difficult to determine how Ontario Parks would measure fulfillment of these objectives. Eagles and Bandoh (2009) state that objectives should be “specific, measureable statements that provide guidance in making decisions regarding appropriate levels, type, and amount of visitor and tourism development” (p. 103). Nonetheless, it is evident that these are fundamental elements of APP’s purpose. Table 5.3 outlines the high- and low-intensity outdoor recreation opportunities provided in APP.

*Table 5.3: Outdoor Recreation Opportunities in APP*

Backpacking	Interpretative Hiking Trails
Back-country camping (Interior campsites)	Hunting & Trapping <sup>3</sup>
Front-country camping (organized campgrounds)	Picnicking
Biking	Snowmobiling
Boating (motorized) <sup>4</sup>	Swimming
Canoeing	Dog Sledding
Kayaking	Wildlife Watching
Fishing	Cross-country skiing

Source: The Friends of Algonquin Park, 2012b

#### **5.1.4 Park Visitation**

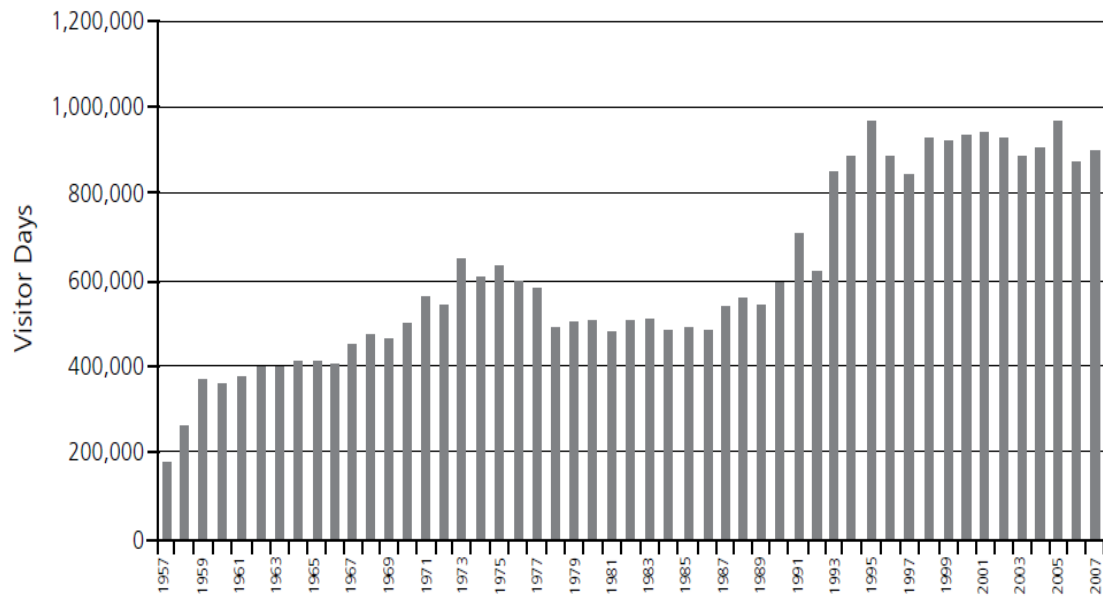
Between 1957 and 1995, visitation in APP grew by 550% (Eagles & Bandoh, 2009). Park visitation doubled between 1985 and 1995 (Eagles & Bandoh, 2009). Since 1993, the increase in park visitors can be attributed to high levels of day users as a result of the opening of

<sup>3</sup> Hunting is only permitted in the Recreation/Utilization Zone of Clyde, Bruton and Eyre Townships with appropriate permits, except the hunting of wolves is not permitted in the Park (MNR, 1998).

<sup>4</sup> Motorized boat use is limited to 38 lakes by regulation (MNR, 1998).

the Visitors Centre (Eagles & Bandoh, 2009). From 1995 until now, visitation has remained steady between 900,000 to a million park visitors per year.

*Figure 5.3 Visitation to APP*



Source: Eagles & Bandoh, 2009, p. 87

In 2010, APP hosted 830,899 visitors or 9% of the total number of visitors to all of Ontario's 329 provincial parks that year (MNR, 2010). Almost half of these visitors (419,240) participated in the natural and cultural heritage education program. Also pertinent to this case study is also the number of camper nights, which can be understood as one camper staying in a provincial park for one night (MNR, 2010), spent in the interior of APP. In 2010, APP hosted 242,688 camper nights (MNR, 2010) or 56% of the total number of camper nights in Ontario's provincial parks that year. Visitors can access the 2,000 kilometers of canoe routes and over 1,900 campsites in the interior through 29 access points (Friends of Algonquin Park, 2012c). These statistics highlight the pressure placed upon the ecosystem of APP as a result of the sheer number of visitors and unlimited accessibility to all zones in APP. However, it also highlights a

significant opportunity for almost a million visitors to pursue outdoor recreational activities, and enhance their understanding and appreciation of APP, as well as learn how to enjoy APP in a responsible manner so that future Ontarians and out-of-province visitors can continue to enjoy APP for another century.

## **5.2 Commercial Tour Operator in APP**

Currently, park management has failed to execute the recreation skills development component of the NHEP. Park management has not developed or implemented any outdoor recreation skills development opportunities and do not provide any outfitting or guiding services for park visitors. This gap in service is currently being filled by commercial tour operators, located inside and outside of APP. The researcher has partnered with a commercial tour operator that has a long history of providing outfitting and guiding services in APP in order to conduct the research. The company's mission statement is:

To promote the enjoyment of the outdoors & deliver value to our customers by providing a full range of innovative and leading-edge quality equipment, coupled with expert advice, that stems from a shared enthusiasm for outdoor adventure.<sup>5</sup>

The company provides outfitting and guided canoe trip services between May 1 and late September. The company has gained a reputation for experienced and knowledgeable staff, high quality equipment, and light-weight canoes. While the commercial tour operator does advertise, much of their business is from word-of-mouth (Personal interview, December 6, 2011). The company prides themselves on the training, advice, and help that their experienced guides and outfitters provide their customers. Unlike other commercial tour operators operating in APP, the company only offers private, custom-designed guided canoe trips that are tailored to meet the expectations, experience, abilities, and interests of the client. The guided canoe trips offered by

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<sup>5</sup> In order to protect the identity of the tour operator, the source of this information will not be provided in this report.

this company cost approximately 15% more than their competitors; however, the company believes that their clients prefer customized, private trips. The company's clients are split between international visitors', mainly from Europe, Canadians, and Americans. The type and size of groups vary. The company provides guiding services for groups of friends, couples, families, and single parents with children. The company sets a maximum customer-to-guide ration of 8:1 (Personal interview, December 6, 2011).

On guided canoe trips, the company's goal is to teach their clients wilderness canoe tripping skills, in the hope that the experience creates a desire to return to APP and go on another canoe trip. This company differs from other commercial tour operators in APP, as their goal is not repeat business, but to teach customers the skills to go on their own, self-guided canoe trip. In general, the company's clients do not go on more than one guided canoe trip with them (Personal interview, December 6, 2011). The company believes that the modern guide's role is one of leadership and education, and, most importantly, is responsible for the safety of the group. Their perception of the role of the guide is based on the assumption that most clients will want, and expect, to take an active role in the experience and learn how to paddle their own canoe and to camp.



## **Chapter 6: Results**

This section outlines the results from the primary research . Focused interviews were conducted with the tour operator's operations manager, guides, and clients who had been on a guided canoe trip with the tour operator in APP. In addition to the focused interviews, the researcher participated in two guided canoe trips in summer 2011.

### **6.1 Operations Manager Interview**

The operations manager is responsible for hiring guides and pre-trip planning. The main criterion for hiring a guide is previous guiding experience. Previous guiding experience is used as a litmus test to ascertain if the guide possess the skills and qualifications to lead a guided canoe trip. Having previous guiding experience is also necessary, because the company does not provide training for new guides. New guides are only informed of baseline customer service expectations when they are hired. The only other criterion for hiring a guide is a current First Aid and CPR certification, as this is required for insurance purposes. No other certifications, such as the Ontario Recreational Canoeing and Kayaking Association (ORCKA) or National Outdoor Leadership School (NOLS), are required, although many of the guides possess one or more additional certifications. Based on the hiring criteria, the company does not require guides to know and practice low-impact camping skills, such as LNT principles. While is it a common assumption that experience is positively correlated with practicing low-impact camping skills, Thorn (1995) found that more experienced backpackers were not significantly more knowledgeable of low-impact camping skills than less experienced backpackers. In the absence of requiring guides to possess low-impact camping skills education or certification as well as the lack of guide training or manual, the company is not able to determine if their guides know or practice low-impact camping skills. Without explicitly requiring guides to practice low-impact

camping skills, such as LNT principles, the company is not cognisant of the camping skills being taught to their clients.

The operations manager describes the role of the guide as a “leader” and “educator.” The “leader” role correlates with Cohen’s (1985) “instrumental” role, which is characterized as focusing on direction-giving, navigating, and safety. The “educator” role correlates with Weiler and Davis’ (1993) “motivator” role, which is characterized as encouraging visitors to modify their behaviour. The operations manager’s perception of the roles of the guide is based on the objective of the company’s guided canoe trip service, which is to teach their clients the canoeing and camping skills to go on their own future, self-guided canoe trip.

The operations manager is also responsible for virtually all facets of pre-trip planning, including finalizing the trip dates and cost, meal planning, route planning, and matching the group with a guide. To facilitate pre-trip planning, the company sends their clients a questionnaire to determine the client’s trip expectations, experience, abilities, and interests. The information gleaned from the questionnaire is used to select an appropriate route. The operations manager believes route planning is the most challenging aspect of his job, because client’s who have never been on a canoe trip before may not have realistic expectations and their *perceived* abilities may differ from their *actual* abilities. Thus, the operations manager has the difficult job of selecting a route that is appropriate for the group. This is a critical function of the operations manager’s job, as selecting a route that matches the client’s actual abilities with the physical and mental demands of the route is critical, in order to provide opportunities to learn and practice new skills, as well as reduce the likelihood of abandoning low-impact practices for the sake of safety. Upon meeting the clients, the operations manager may opt to change the day the group is supposed to depart for their trip, if he feels the clients would not be able to complete the trip.

However, altering the route is subject to campsite availability. Clients are also sent menu planning information to determine their likes, dislikes, and food allergies. This information is used to pre-package breakfasts, lunches, dinners, and snacks.

During the pre-trip planning phase, the clients are only responsible for packing their personal items. The company provides their clients with a personal items packing list. Clients are also directed to some pre-trip information on the company's website. For example, clients can access information on canoe tripping, such as maps, park rules and regulations, fishing licences, and more; however, based on the findings from interviews with clients, this information is usually not accessed before embarking on the guided canoe trip. The operations manager states that ironically, "Most people are only concerned about the weather and bears!"

## **6.2 Guide Interviews**

In total, seven guides currently employed with the company were interviewed for this research. Based on the findings from the interviews, the guides have between three to ten years of guiding experience. All of the guides possess current First Aid and CPR certification and many of the guides also possess at least one ORCKA certification. Only one guide has completed the LNT Trainer Course as part of a post-secondary degree in outdoor recreation. In addition, two other guides have completed a post-secondary degree specializing in outdoor recreation.

The majority of guides perceive their main roles to be "instrumental" and "communicative." The "instrumental" role is characterized as focusing on giving direction, navigating, and safety. The "communicative" role is characterized as sharing information on select points of interest, such as the relationship between white pines, logging, and J.R. Booth, or the dissemination of correct information, such as identifying a tree species. Sharing this

information may enhance the visitors' appreciation and understanding of the natural environment as well as the human history of APP; however, it does not contribute to the visitors' understanding of environmental issues in general and their environmental impacts specifically as well as how they can modify their behaviour to reduce their impacts. While both the operations manager and guides agree that a guide should fulfill the "instrumental" role, the guides did not perceive one of their primary roles as a "motivator," which contradicts the operations manager's viewpoint. These findings correspond with the guides' general perception that the main goal of the company's guided canoe trip service are to provide a "fun" and "safe" trip. This disconnect highlights the divergent viewpoints of the operations manager and guides. Although, two guides did correctly describe the company's goal for guided canoe trips, none of the guides mentioned teaching "low-impact," "minimal impact," or "leave no trace" camping skills when describing their roles. It is evident that most of the guides are not aware of the primary roles that the company would like them to fulfill. This may be attributed to the lack of guide training or manual.

Guides were then asked if they thought visitors have any impacts on the environment and if so, to describe the impacts they commonly observe in APP. The guides unanimously agreed that visitors have significant environmental impacts on APP. The most commonly observed visitor-induced ecological impacts are litter, campfire-related impacts, trampling of vegetation along portages, at canoe landings and campsites, water pollution, and harassing and disturbing wildlife. These visitor-related ecological impacts correspond with common direct visitor impacts as outlined by Leung and Marion (2000); however, the prevalence of litter is surprising as research in other protected areas suggests that litter is much less of a problem now than a

few decades ago, as a result of the “Pack It In, Pack It Out” campaign (Cole, Watson & Roggenbuck, 1995).

Many guides believe that different user groups (e.g., canoeists versus sport fishers) have different impacts on APP natural environment. Some guides also thought that the farther a visitor travels from the access point, less damage to the natural environment is seen, which some guides attribute to the length and difficulty of the portage, that separates recreationalists’ with skills from the recreationalists’ without skills. This means that guides believe the behaviour (lack of skills), not just the number of visitors, causes environmental degradation.

Guides were then asked about their knowledge of LNT principles and if the guide taught their clients any LNT or low-impact skills, in order to mitigate the commonly observed visitor-induced impacts the guide had described. Only one guide explicitly said that “I teach the LNT principles on my trips [ with clients].” This is also the only guide who has completed the LNT Trainer Course. In general, a guide could describe between one to four of the seven LNT principles; however, this does not mean the guide does not practice LNT principles they did or did not describe. In general, the guides are not more familiar with one LNT principle over another.

Overall, the guides practice at least one LNT principle on their guided canoe trips, although, some guides practice as many as three LNT principles on their guided canoe trips. The most commonly practiced LNT principle is the “proper disposal of waste”. The incorporation of this LNT principle into guided trips corresponds with the most commonly observed visitor-related impact, which is litter. This principle pertains not only to litter, but also human waste, grey water, and food waste. Properly disposing of one or more types of waste was discussed by six of the seven guides interviewed. One of the guides discussed what

he believes to be the proper disposal of food and water waste. The guide said that “I try to get zero food in the lake by using dirt and pine needles to remove food scraps, I burn the food scraps in the fire, and use environmentally friendly soaps *in the lakes* [emphasis added].” Removing food scraps from dishes with natural materials and burning the food scraps and natural materials in the fire is appropriate; however, washing dishes, with or without environmental friendly soap, directly in the lake is a high-impact camping practice. This practice will negatively alter water quality and reduce the health of the aquatic ecosystem (e.g., Leung & Marion, 2000). Conversely, another guide describes washing and disposing of dish (grey) water 200 feet away from the shoreline, which is the practice advocated in the LNT program.

Ironically, only two guides discussed practicing the “minimize campfire impacts” LNT principle, although campfire-related impacts is the second most commonly observed visitor-related impact seen in the park. When the guides were specifically asked if they thought cooking on a camp stove instead of a campfire would add or detract from the client’s overall experience, the response was divided. Some guides thought using a camp stove detracts from the wilderness experience because camp stoves are “loud, distracting and unnatural” or are contrary to traditional notions of “roughing it and living off the land.” Conversely, some guides believe that using a camp stove to cook meals would not detract from the experience. In fact, some guides already practice using a camp stove for cooking and only light a pleasure campfire at night. Although, when asked if eliminating all campfires on guided canoe trips would add or detract from the visitors’ experience, the guides unanimously agree that eliminating campfires would detract from the clients experience. Guides describe having a

campfire as important because “It is what people think of camping; sitting around a campfire and telling stories.”

The third most commonly cited visitor-related impact observed by guides is trampling of vegetation at canoe landings, campsites, or along portages. Two guides discussed incorporating the LNT principle of “camping and traveling on durable surfaces,” into their guided canoe trips, during the interviews. Only one guide discussed the “be considerate to others” LNT principle and another guide discussed the “respect wildlife” LNT principle. This implies that the majority of guides may not be incorporating these LNT principles into their trips. Furthermore, none of the guides discussed the “leave what you find” and “plan ahead and prepare” LNT principles. Arguably, “plan ahead and prepare” is the responsibility of the outfitting staff, not the guides’.

To deliver LNT messages guides use a combination of verbal messages and modeling of appropriate behaviour to encourage the adoption of low-impact behaviours, although modeling is more heavily relied upon. This is because many guides do not want to make the clients’ feel like “they are in school.” According to the guides, the method used to encourage behaviour modification depends on the group’s expressed interest in learning new skills. Some clients are overwhelmed, some are keen to learn, and others are simply not interested in learning. One guide said that “Some groups bring a guide because they wanted to learn canoeing and camping skills so they can go on their own trip and others wanted a Sherpa that would carry their stuff, make their food, and put up their tent.” Some guides are also more apt to encourage behaviour modification from children than adults, because “children are used to receiving instruction.”

The guides were also asked if they provide an ecological or social rationale for practicing a low-impact skill. The unanimous response was that a rationale *should* be provided, although

some guides do not always provide one, because doing so may detract from the clients overall enjoyment by “making them feel like they are in school.” This is the same reason given by guides for relying mainly on modeling appropriate behaviour, instead of using verbal messages. Indeed, many guides discuss leading by example. One guide discusses gathering firewood himself and then showing the clients the type of wood he gathered and explain why. Although, verbal instruction is relied on to communicate some appropriate behaviours, such as only using the privy pit at the campsite and where to set up their tent.

The guides believe that some clients would prefer and some would not prefer to be expressly taught LNT principles on guided canoe trips. Again, guides discuss the need to balance having fun and teaching new skills. One guide said that “It is not a lesson based thing. I like to have something in my hand and discuss it in an informal way. I also try to point things out without being a teacher. To provide a sense of discovery and development.” This statement suggests that the approach used to encourage behaviour modification is important, in order to maintain enjoyment and a comfortable learning environment. Another guide said that “You can tell by the first or second day if it is a spiritual experience and if they can feel the energy and force of nature. You can tell if they are open to being moved by the experience. I love to be able to say to them you can do this by yourself next time. It is a bit of an incentive for them.” This statement highlights the guide’s ability to read the group’s reaction to the new experience and ascertain if the clients are interested in learning the skills required to go on a future, self-guided canoe trip. When the guides were asked if they thought the company has already incorporated the LNT program into guided canoe trips, the majority of guides thought the company could, and should, do a better job incorporating the LNT program into all guided canoe trips.



These findings show that while none of the guides have identified their primary roles as a “motivator” or “environmental interpreter”, many of the guides are encouraging modification of the visitors’ behaviour to reduce visitors’ impact by practicing at least one of the LNT principles on guided canoe trips. This means that guides are embodying the “motivator” role. Guides prefer to lead by example, by modeling appropriate behaviour, instead of using verbal messages, although research shows that combining verbal messages with modeled behaviour is a more effective way to modify visitors’ behaviours (e.g., Littlefair, 2004).

#### **6.4 Client Interviews**

In total, five interviews were conducted with clients who have gone on a guided canoe trip in APP with the tour operator. The clients have chosen to go on a guided canoe trip because they felt they lacked the experience and skills to go on a self-guided canoe trip. Of the five clients interviewed, two clients have been on one or more weekend guided canoe trips, with other outfitters, in other protected areas, although they still felt they did not possess the skills to go on a canoe trip without a guide. Many clients also cited concerns pertaining to getting lost or hurt, as primary reasons for hiring a guide. Thus, having a guide is viewed by clients as granting access, navigating, ensuring safety, and direction-giving. This correlates with Cohen’s (1985) “instrumental” role of the guide. The reason the clients selected the particular tour operator is based on the company’s reputation and referrals. Interestingly, none of the clients described the ability to go on a customized, private canoe trip, as the reason for selecting the tour operator. This differs from the operations manager’s perception that clients elect to go with the company based on this unique service offering.

From the perspective of the clients, pre-trip planning is limited to completing the questionnaire, packing personal items, and, in some cases, discussing potential canoe route

options with the operations manager. Some of the clients who were interviewed felt that the potential canoe route options provided by the operations manager were meaningless to them, as they are not familiar with APP and have no previous experience route planning. Thus, the clients had difficulty selecting a canoe route among the alternatives. This implies that clients are also not being taught route planning by the operations manager. Clients may be more apt to have participated in route planning if they are informed of general route planning rule-of-thumbs' (e.g., a canoe being paddled tandem can travel between 2 to 6 km per hour, or 12-24 km per day) (MNR, 2009) or materials to reference (e.g., topographical maps), by the operations manager. This would also aid the clients in planning future, self-guided canoe trips.

Clients were also asked about their experience on their guided canoe trip, in order to gain an understanding of the skills that they were taught and how they were taught to them. In general, the clients responses collaborated the findings from the interviews with the guides and participant observation. The clients describe guides using a mix of verbal message and modeling appropriate behaviour. For example, one of the clients discussed how they were “forced” to leave the portage trail as a result of poor conditions. The client said that “The portages were the most challenging part of the trip. We were forced to go off the trail, because the sun did not come out until the last day of our trip and the portages were mucky.” This statement indicates that clients may not be aware of the importance of staying on portage trails and require verbal messages as well as modeling appropriate behaviour. This means that when clients are faced with poor conditions along portage trails, they will most likely decide to leave the trail, thus, not practicing the LNT of traveling on durable surfaces, such as existing portage trails.

Clients discussed guides using verbal messages and modeling to convey the LNT principle of minimizing campfire impacts. For example, clients were instructed by the guides to collect “dead and down” firewood; however, due to the scarcity of firewood on campsites, guides collected the majority of the firewood. Only one of the clients interviewed had participated in setting the campfire, even though a campfire was lit at least three times a day to cook breakfast and dinner as well as for a pleasure campfire at night. Interestingly, when clients were asked if they preferred cooking meals on a campfire or camp stove, the majority of clients thought it would be easier and safer to cook on a camp stove. This was also cited as a reason why the majority of clients did not participate in cooking meals. Only three of clients were shown how to use the camp stove. These findings suggest that the majority of clients would most likely be unable to collect appropriate firewood and light a campfire. The majority of clients would likely be more inclined to use a camp stove for cooking, as more clients were shown how to use the camp stove and feel more comfortable using it for cooking, which in turn would reduce their impact on the natural environment.

According to the clients, the guides relied on behaviour modeling to convey the importance of disposing of grey water well away from the shoreline. This corresponds with the LNT principle of properly disposing of waste. Most clients reported guides’ disposing of grey water in the forest, far away from the tents. This is an example of modeling appropriate behaviour. One client used a combination of verbal messages and modeling to teach the clients how to dig a sump hole to dispose of the dish (grey) water. This guide also provided the ecological rationale for disposing of grey water in that manner. This client was thoroughly impressed by the guide’s practice and could describe it in detail. This suggests that actively engaging the client in the demonstration and explaining the rationale may be an effective means

of increasing knowledge gain. Clients also reported guides' using verbal instruction to show the clients how to wash and brush their teeth in a pot of water provided for this purpose. Due to the length of the guided canoe trips, on average three days, none of the clients bathed; therefore, is it not clear if clients would bath directly in the lake or set up a washing station. Clients also discussed guides using instruction and modeling to encourage clients to pick up litter along portages and at campsites. The researcher observed similar behaviour from guides and clients on the guided canoe trips that the researcher joined.

In general, clients were not provided with the ecological or social rationale for adopting or modifying a behaviour. For example, the ecological rationale for pitching a tent within the boundaries of the campsite, on an already impacted surface, was not given. Clients discussed how their guide would point out suitable tent sites upon arrival at the campsite and requested that the clients set-up their own tent on one of the identified tent sites, although did not explain why that tent site was selected.

Based on these findings, it is apparent that the tour guides assumed the "instrumental" and, to a lesser extent, "motivator" roles. Based on the clients' responses to the interview questions, the guides only require clients to carry their personal backpack and pitch their own tent. The rest of the tasks, such as cooking dinner, treating water, and starting a fire, were largely assumed by the guide. The tour guides usually did not explain how or why they were doing something, such as building a smaller cooking fire, unless explicitly asked by the client. This could be attributed to some clients' lack of expressed interest in learning, the guide's perceived role, or a lack of time to teach clients new skills. As a result, many of the clients did not participate in the majority of tasks around the campsite. Even though the guides may have been modeling appropriate behavior, in many instances, it may not be apparent to the clients

that the action was purposeful and is an important ethic or skill to develop, unless accompanied with verbal messages. These findings suggest that the majority of the clients did not learn the skills required to go on a future, self-guided canoe trip.

The client interviews concluded with the clients' being asked if they had a fun trip. The unanimous response was they had a terrific trip. Ironically, none of the clients have, or would gone on, a self-guided canoe trip since going on the guided canoe trip with the tour operator. Therefore, the researcher is unable to assess future behaviour, only knowledge gain. When asked why, three primarily reasons emerged. The majority of clients interviewed believe they did not possess the skills to go on their own self-guided canoe trip. One client said that "I couldn't collect the firewood, make the fire, cook the meals, or do anything else the guide did, but I might consider going on another guided canoe trip." This statement suggests that some clients did not learn the skills required to go on a future, self-guided canoe trip. Another client said that "My wife and I are in our early 60s and we found it really hard work. The canoe trip was one of the most physically challenging things we have ever done. We canoed for six hours each day and my back could not take it." This comment suggests that some clients find the experience too physically challenging. This could imply that the canoe route selected for some clients may not match their actual physical abilities. Finally, another client had been on multiple guided canoe trips with the tour operator, yet still does not want to go on a self-guided canoe trip, even though she feels she possesses the skills to go without a guide. The client said that "no one wants to do all the grunt work on a canoe trip, so we bring a guide with us." When asked what type of work constituted "grunt work," the client provided the example of "schlepping the canoes across the portage." This implies that this client views the role of the guide as a "Sherpa", not a "motivator" or "environmental interpreter". This remark reinforces

the comment made by one of the guide's during an interview, that some clients want to learn the skills and others want a Sherpa.

## **6.4 Participant Observation**

The researcher participated in two guided canoe trips, with two different guides. Both guides had ten years or more of experience as a guide and current First Aid and CPR certification. One of the guides also possessed ORCKA Level 1 and 2 certification as well as Swift Water Rescue certification. Based on the company's hiring criteria, both guides possessed the skills to be a guide. Where the guides' skill set diverged was in regards to their knowledge and adoption of LNT principles, which differed substantially.

In both instances, it was clear that neither of the groups of clients were aware of the canoe route prior to arriving at the company's store. This meant that the clients were not engaged in selecting a route; and therefore, the clients most likely do not possess the skills to plan an appropriate canoe route for a future, self-guided canoe trip. Upon arriving at the company's store, clients were shown their food and the equipment. It is not clear if clients were taught how to plan meals and snacks (e.g., number of calories required per day), although, they were shown their food laid out on a table, in order to ensure there was no inappropriate food, or too much or too little food. The outfitting staff also pointed out the equipment on the table, but did not describe how to use it; however, the guides did teach the clients how to use some of the equipment on the guided canoe trip. In general, it would appear that the clients were not engaged in many, if not all the aspects of pre-trip planning, which is the first LNT principle.

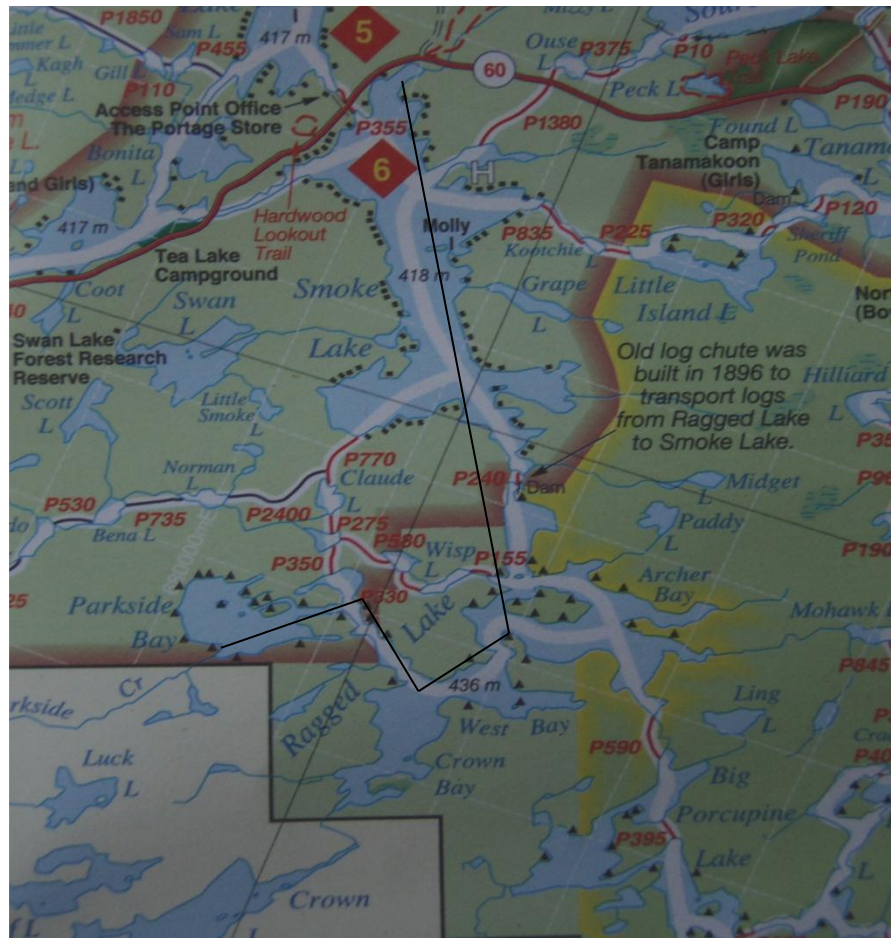
The two guided canoe trips that the researcher participated in will be discussed separately from this point on, in order to highlight the differences between the guides'

knowledge and adoption of LNT principles as well as the techniques used to convey the low-impact or LNT practices that were taught on the guided canoe trips.

#### **6.4.1 Trip A**

On trip A, the guide practiced five LNT principles, including travel and camp on durable surfaces, dispose of waste properly, respect wildlife, be considerate to other visitors, and minimize campfire impacts. This guide did not practice the LNT principle of “leave what you find” as a teachable moment did not present itself on the guided canoe trip; therefore, this LNT principle was not observed. The canoe route traveled on this guided canoe trip is shown below in Figure 6.1. The guided canoe trip departed from Smoke Lake, at access point 6, and traveled through Ragged Lake, and Parkside Bay Lake. The group spent one night on Parkside Bay Lake and traveled the same route back to the access point 6 the next day to complete their trip.

Figure 6.1 Two-Day Canoe Route, Participant Observation



Source: L. King, 2012

The guide relied primarily on modeling appropriate behaviour, instead of using verbal messages. For example, the guide modeled traveling on durable surfaces (LNT principle) by staying on existing portage trails, instead of instructing the clients not to leave the portage trail. While clients were not observed leaving the portage trail, the group traveled through heavily impacted areas, with wide  $> 3$  m portage routes, during dry conditions. In the absence of the guide providing verbal messages, the clients may not be aware of the importance of staying on the trail, in the context of APP, and may be tempted to walk off the trail under different conditions, such as wet conditions. Camping on durable or already impacted surfaces (LNT



principle) was encouraged by the guide. This guide used verbal messages to point out appropriate tent sites within the boundaries of the campsite (e.g., on an already impacted, durable surface). However, the guide did not provide an ecological or social rationale for choosing the tent sites. Thus, the clients may not have known why the specific tent site was selected by the guide.

The guide modeled many techniques that can be used to minimize campfire impacts. While the guide explained how to collect appropriate firewood, the clients on the trip did not display any interest in performing this task. Thus, the guide modeled collecting appropriate firewood. The guide also modeled how to rearrange the rocks in the fire pit, to allow for a smaller cooking fire. In the absence of any verbal messages, it did not appear that the clients were cognisant of the reason for doing this. The guide did not teach the clients how to make or cook over the campfire. Again, this may be attributed to the lack of interest shown by this group.

The campfire was not the only method used for cooking. The guide also used the stove for hot drinks and meals when possible; however, many of the meals, particularly breakfast on the first day and dinners, required multiple pots. This made cooking on a single burner difficult. Although, the guide instructed the clients on how to use the camp stove. Therefore, the clients should be able to cook on a camp stove, but most likely have great difficulty starting and cooking on a fire.

The guide used verbal messages and modeling appropriate behaviour for picking up litter upon arriving and before departing from campsites, properly disposing of grey water, and food waste. The guide used instruction and modeling to teach the clients' how to properly dispose of grey (dish or bathing) water and food waste, by digging a sump hole, covering the opening

with leaves, pouring the dish water into the hole, and collecting the leaves and food scraps to be burned in the fire or packed out. The guide also explained why the water and food waste was being disposed of in this manner. This exemplifies the most effective means of teaching a LNT principle while on a guided canoe trip.

While the likelihood of observing wildlife on a canoe trip in APP is relatively high, the clients did not encounter any large mammals; however, there was interaction with more commonly observed wildlife. The clients did not harass or disturb the animals they encountered, and simply observed them; therefore, there was no need to correct their behaviour. The guide also engaged the clients in counting and recording the number of adult and young Common Loons as well as active Common Loon nests observed on the lakes that the group traveled through. The guide explained the current research regarding the effects of acid rain on the Common Loons in APP. The group had the unusual and astonishing experience of witnessing approximately 50 Common Loons grouped together on one lake.

The guide modeled keeping a clean and tidy site and storing food and personal hygiene products in a food barrel, secured to a tree, at night. These practices minimize potentially dangerous encounters with wildlife, such as black bears, and attracting nuisance wildlife, such as raccoons, to the campsite. However, like many of the low-impact camping skills taught on the guided canoe trip, the guide did not provide an explanation or rationale for storing the food and hygiene products in this manner. While this practice may seem intuitive, many novice campers may not practice this skill and may create conflicts between wildlife and visitors due to the improper storage of food and keeping a messy campsite.

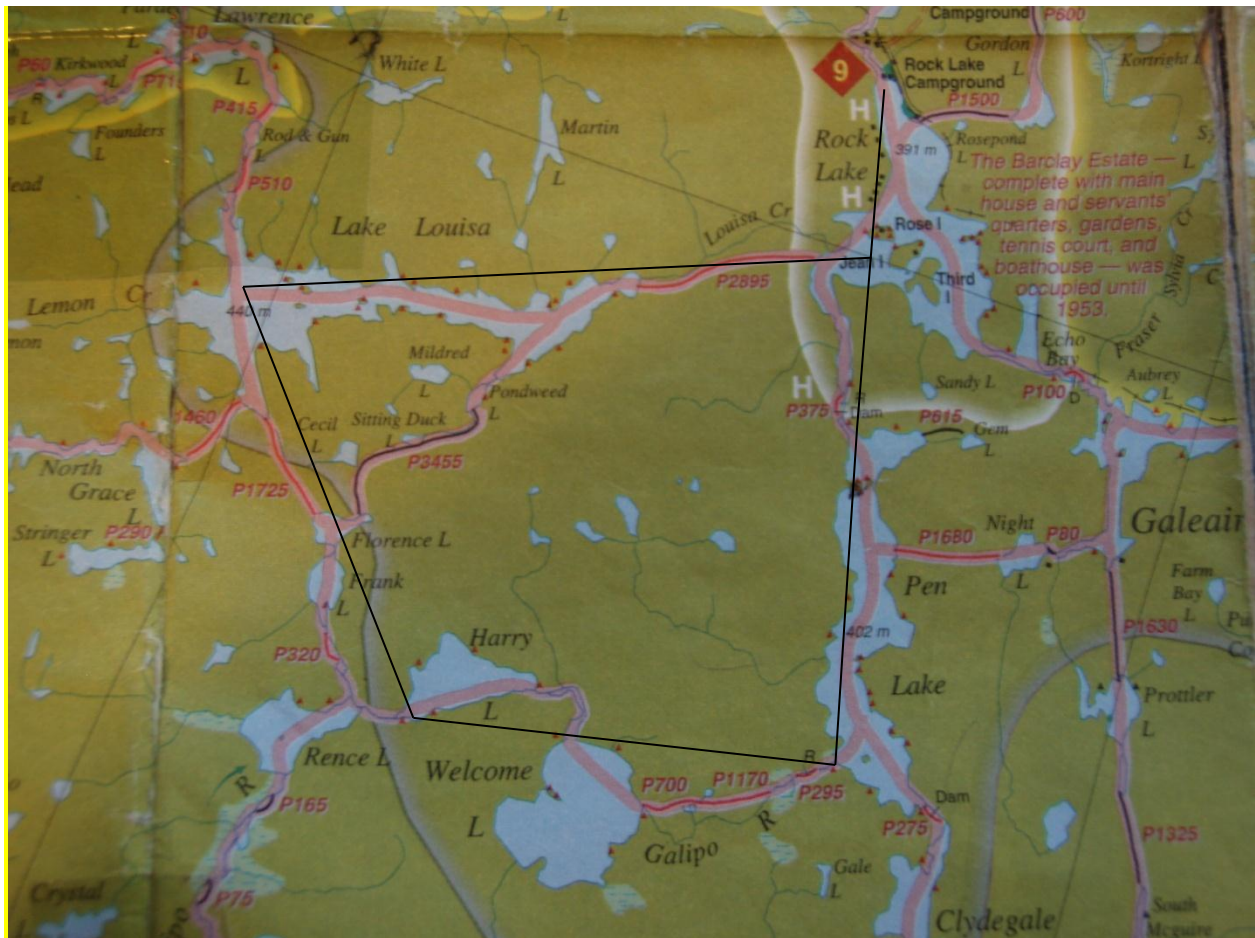
The final LNT principle observed was being considerate to other visitors. The guide modeled very respectful and courteous conduct towards other park users. When the group

encountered other visitors, the guide offered a friendly greeting, stepped aside to let someone pass, and waited patiently at busy portage landings.

#### **6.4.2 Trip B**

This guide practiced two LNT principles, including be considerate to other visitors and respect wildlife. The guide did also practice some aspects of the other LNT principles. For example, the guide collected appropriate firewood; however, he burned plastic food wrappings. This guide also did not practice the LNT principle of “leave what you find” as a teachable moment did not arise; therefore, this LNT principle was not observed. The canoe route traveled by the group is shown below in Figure 6.2. The trip departed from Rock Lake, at access point 9, and completed a loop, traveling through Pen Lake, Welcome Lake, Harry Lake, Frank Lake, Florence Lake, and Lake Louisa, in four days.

Figure 6.2 Four-Day Canoe Route, Participant Observation



Source: L. King, 2012

The guide relied primarily on modeling appropriate behaviour, instead of using verbal messages. For example, the guide modeled traveling on durable surfaces by staying on existing portage trails, instead of instructing the clients not to leave the portage trail. Unlike the other group, this group traveled through less heavily impacted areas, with narrower trails. The clients were not observed leaving the trail; however, they were observed dropping their backpacks beside the trail on live vegetation, resulting in widening of the portage trail. In the absence of the guide providing verbal messages, the clients were likely not aware of the importance of staying on the trail and not placing the canoe or backpacks on live vegetation.

The other component of the LNT principle of staying on already impacted surfaces is camping on durable or already impacted surfaces, which was not always encouraged by the guide. The guide did not use verbal messages to point out appropriate tent sites within the boundaries of the campsite (e.g., on an already impacted, durable surface), which resulted in the clients' erecting their tents outside of the campsites' boundaries two of the three nights. It was apparent that the guide and clients were not aware of the importance of camping within the existing boundaries of the campsite. This is a high-impact practice that does not conform to LNT program.

The guide modeled some low-impact practices that can be used to minimize campfire impacts; however, engaged in some high-impact behaviours. The guide did collect appropriate firewood, although the guide was forced to find appropriate firewood around the perimeter of lake, instead of at the campsites, because the campsites were denuded of dead and down firewood. This means that clients could not observe how the guide collected appropriate firewood. The absence of appropriate firewood on the campsite did not deter the guide from using campfires as the only means of cooking on the guided canoe trip.

This guide also modeled an inappropriate behaviour by burning plastic food wrapping in the campfire multiple times. This is an outdated practice that releases toxic air pollutants, such as styrene, xylene, and lead (Davies, 2004). Unlike the other guide, this guide taught the clients how to build a "log cabin" and "teepee" campfire. The clients seemed to really enjoy learning this skill and practiced setting a campfire on the guided canoe trip. The guide did not differentiate between building a cooking fire (e.g., smaller, hotter, and less flames) and a pleasure fire (e.g., larger and more flames). The guide resumed the responsibility of cooking on the campfire once the campfire was lit. The camp stove was only used for making hot drinks.

The guide also instructed the clients on how to use the camp stove. By teaching these two skills, the clients will most likely be able to cook on a camp stove or campfire.

The guide used verbal messages and modeling appropriate behaviour to encourage clients to pick-up litter upon arriving and before departing from campsites. In addition to the proper disposal of garbage, this LNT principle encompasses the proper disposal of grey water and food waste. The guide used instruction and modeling to show the clients how to remove food scraps from the dishes and proceeded to wash the dishes, with biodegradable soap, directly in the lake. The latter practice is a high-impact camping practice and is contradictory to the LNT program. This practice was also discussed by one of the guides during interviews. This suggests that the appropriate method for washing dishes and disposing of grey water is inconsistent among the guides, with some guides practicing low-impact methods and others practicing high-impact methods.

The clients expressed their hopes of seeing a moose on their canoe trip; unfortunately the group did not encounter any large mammals. Like the other group, the clients did not harass or disturb the animals they encountered and simply observed them; therefore, there was no need to correct their behaviour. Unlike the other guide, the guide did not engage the clients in recording their observations of the Common Loons.

This guide also modeled keeping a clean and tidy site and storing food and personal hygiene products in a food barrel, secured to a tree, at night. These practices minimized potentially dangerous encounters with wildlife, such as black bears, and attracting nuisance wildlife, such as raccoons, to the campsite. However, like many of the low-impact camping skills taught on the guided canoe trips, the guide did not provide an explanation or rationale for storing the food and personal hygiene products in this manner. While this practice may seem

intuitive, many novice campers may not practice this skill and may create wildlife-visitor conflicts due to the improper storage of food and keeping a messy campsite.

The final LNT principle observed is to be considerate to other visitors. The guide modeled very respectful and courteous conduct towards other park visitors. The guide embodied this LNT principle when the guide offered and assisted a family that was clearly struggling to complete a portage by carrying their canoe for them as well as assisted an elderly couple over an inactive beaver dam. The clients praised the guide for providing the much needed assistance to the other family.

In addition, to observing both guides knowledge and adoption of LNT program, the researcher also observed the guides' use of the natural environment to educate clients about the lakes, river, flora, and fauna of APP as well as convey park management objectives. It was observed that clients showed an interest in learning about the natural heritage in APP, which was expressed by clients asking questions about the types of trees at the campsite, aquatic vegetation in lakes passed along the way, how the lakes were formed, and the life of a moose. In general, the guides were more knowledgeable about the fauna than the flora. Both trips were also provided with two field guide books; however, the field guide books were not actively used by neither of the guides. In general, both guides were more inclined to discuss the cultural heritage of APP. For example, guides discussed when and why APP was established, the railway and logging in the park, and the story of Tom Thomson's life and death. Finally, neither of the guides discussed the park agency nor the goal and objectives of APP.

### **6.4.3 Findings from Participant Observation**

These observations corroborated the findings from the guide interviews. The guides' knowledge of LNT principles varied greatly. One of the guides was very knowledgeable of low-impact camping and the other guide was far less knowledgeable of low-impact camping skills as well as confusing low-impact camping skills with high-impact camping skills. Both guides tended to rely on modeling appropriate behaviours, instead of using verbal messages to encourage appropriate behaviour. Although, verbal messages was commonly used for asking clients to pick-up litter and use the privy pit. Guides did not use verbal messages to encourage clients to travel and camp on durable or already impacted surfaces and minimize campfire impacts. In general, neither of the guides provided an ecological or social rationale for adopting a new behaviour or modifying an existing behaviour. In the absence of verbal messages and providing a rationale, the effectiveness of only modeling behaviour may be substantially lower than using both techniques together.



## **Chapter 7: Recommendations**

The following recommendations are based on findings from the literature and documentation review and the case study research. The recommendations are meant to highlight opportunities for tour operators and Ontario Parks to forge a partnership that will enhance the visitors' experience and protect the natural environment of APP through the delivery of the LNT education program by tour operators, operating in APP.

### **7.1 Constructing Partnerships for Visitor Management Planning**

Ontario Parks is confronted with “wicked” problems and “messy” situations that have been created by insufficient funding and personnel, conflicting goals, unknown cause-effect relationships, lack of information, and the distribution of political power. When planning in this type of environment, the rational-comprehensive planning model has proven inadequate. Lachapelle *et al.* (2003) argues that the traditional rational-comprehensive planning approach seems to function poorly, exasperate already contentious situations, leads to contested decisions, and public dissatisfaction. Ontario Parks' reliance on a scientific deterministic approach to VMP through the use of carrying capacity ignores the reality of the planning context. Determining carrying capacity requires: the identification of acceptable resource and social conditions, which is a value-laden exercise; identification of current conditions, which requires funding and personnel; long-term monitoring of conditions; and management actions to restore conditions, which requires long-term funding and personnel. In the “messy” context of VMP, establishing carrying capacity is extremely challenging. In order to overcome the ineffectiveness of this approach to VMP, collaborative planning may be a more useful approach that emphasises building consensus about the desired future and how to get there.

Currently, there are some opportunities for affected stakeholders to participate in VMP for APP; however, Ontario Parks' approach still conforms to the expert-driven model and serves only as a means to collect information and educate of the public (Lachapelle *et al.*, 2003). Collaborative planning goes beyond this form of tokenism participation (Arnstein, 1969), and attempts to build consensus amongst stakeholders. However, McCool (2009) points out that consensus building can be difficult to achieve and place a heavy burden on the partnership. Instead, McCool (2009) suggests members of the planning partnership should try to move away from their individual positions, and instead discuss interests and seek to resolve conflicting interests through identifying strategies and tactics that members are at least willing to "live with," because the members share a common interest and goal with park management. For example, tour operators may be willing to make trade-offs between profit and resource protection, because they share common interests and goals with park management, that is, to protect the integrity of the resource that the industry relies upon.

The affected stakeholders need to also be engaged in implementation and ongoing monitoring. During the implementation and ongoing monitoring phases, creating partnerships between Ontario Parks and affected stakeholders, such as tour operators, could assist park management in achieving provincial park objectives, such as maintaining or restoring the ecological integrity of the park. Tour operators can contribute towards the achievement of APP objectives through providing opportunities for high-quality recreational experiences that encourages responsible use of the park's resources. Forging partnerships with tour operators means that Ontario Parks may be able to perform tasks that are not presently being done because of inadequate funding, personnel, and time. For example, the outdoor skills development

component of the NHEP can be at least partially delivered through a partnership with tour operators operating in APP.

McCool and Guthrie (2001) identify four attributes of a successful planning partnership: representativeness, ownership, learning, and relationships. Developing consensus requires that the VMP process be inclusive and representative of the diversity of interests and beliefs that were affected and involved in APP (Conley & Moote, 2003). By including a broad range of stakeholders “the partnership may transform the power relationships in a setting, changing the role and reducing the influence of technocratic expertise and strengthening the authority of experiential knowledge and public preferences” (Conley & Moote, 2003, p. 140). Ownership means a sense of shared responsibility for conceiving, implementing, and monitoring the plan. Constructing a sense of ownership can greatly increase the plans acceptance by the public at large and successful implementation. Learning is also an important aspect of VMP partnerships that may involve providing opportunities to enhance understanding of a planning issue (e.g., decreasing number of park permits), the planning process (e.g., opportunities for input and/or decision-making), or gaining a better understanding of the backgrounds and perspectives of other partners (e.g., personal experience, traditional ecological knowledge) (McCool, 2009). Developing relationships between Ontario Parks’ and affected stakeholders facilitates consensus building, greater understanding of each others, and shared ownership of the process.

Developing a partnership between Ontario Parks and tour operators should be based on openness, mutual respect, trust, equitable access to information and resources, understanding of other interests, and genuine attempt to reconcile them (McCool, 2009). McCool (2009) argues that VMP partnerships result in the identification of socially acceptable actions and desired future, plan development and implementation may be more efficient, and an improved model of

governance that more effectively integrates conservation with providing ecologically-sustainable visitor opportunities.

## **7.2 Algonquin Park Tour Operators Association**

The collective interests of tour operators operating in APP may be better represented in VMP through the re-establishment of an Algonquin Park Tour Operators' Association. In the 1940s, lodge owners, guides, and outfitters founded the Algonquin Park Tourist Association (APTA) to lobby park management to place more stringent controls on float planes landing on lakes in the interior of APP (Killan, 1993). The APTA was aware that the maintenance of wilderness atmosphere (resource conditions) and the continece of excellent angling (social conditions) in the interior of the park were required to sustain their livelihood (shared goal). The APTA was successful in persuading park management to tighten controls on floats planes; however, park management simultaneously tightened controls on boat caches that were operated by some of the members of the APTA, which in turn negatively affected their profitability. This turn of events caused the APTA to object to the removal of float planes and boat caches, resulting in the APTA abandoning their cause and eventually ceasing to exist as well as the policy not being enforced until much later (Killan, 1993). This example highlights the importance of maintaining the quality of the wilderness experience of the interior of APP for tour operators continued success and the need for tour operators to make some trade-offs between protecting the environment and profits.

In many protected areas in Canada, particularly in national parks, tour operators have formed associations to represent their interests. For example, the Gwaii Haanas Tour Operators Association (GHTOA) was formed to:

...foster quality, ethics and communication among Gwaii Haanas tour operators and to represent the interests of the tour operators, their clients and the public to the

Haida Nation, the British Columbia government and the Federal government, regarding issues related to Gwaii Haanas. (GHTOA, n.d.)

The GHTOA purpose statement highlights the need to foster quality and ethics amongst its members as well as facilitate communication amongst affected stakeholders to ensure their interests are represented in park planning and management. This is a more appropriate mandate than focusing on single policies or issues, such as restrictions on activities (e.g., float planes). The tour operators' association in APP should be actively engaged in visitor management planning, implementation, and ongoing monitoring, in order to affect the visitor management strategies and tactics adopted by park management. For example, the association's involvement in the establishment of park objectives and desirable resource and social conditions may be more effective than attempting to change tactics that conform to strategic visitor objectives, which are established much earlier in the planning process.

Currently, the GHTOA is actively involved in opposing external threats to the ecological integrity of Gwaii Haanas National Park Reserve and Haida Heritage Site, such as fish farming and offshore oil and gas drilling, that would negatively affect the greater park ecosystem (GHTOA, n.d.). The GHTOA also represents its members interests by opposing a proposed increase in park user fees and prohibitive liability insurance requirements for businesses operating in the park (GHTOA, n.d.). The GHTOA is focused on protecting the ecological integrity of the park that they rely upon, in order to maintain high quality visitor experiences. This highlights the shared goals between park management and the GHTOA.

Some associations seek to go beyond representing the interests of tour operators in VMP and endeavour to establish a code of conduct or certification for tour operators operating in a protected area. For example, the Association of Canadian Sea Kayak Guides (ASCKG) began as

a grassroots initiative to jointly develop a code of conduct for sea kayak guides, operating off the coast of British Columbia, as a result of the sudden growth in the number of companies offering sea kayak guiding services, the decrease in the average level of experience of guides, and a fatality on a guided sea kayak trip in the Queen Charlotte Islands, B.C. (ASCKG, 2012). However, dissent among the tour operators over setting specific guidelines (e.g., client-to-guide ratio and level of First Aid certification required) led to the collapse of the grassroots initiative. The lack of consensus and distrust was the result of differing views regarding how much profit tour operators were willing to trade-off, in order to maintain safety and quality. Clients' safety, not the condition of the natural environment, was the driving force behind the initiative.

Instead of abandoning the work that had already been done, a few tour operators forged ahead and established the ASCKG. Today, the ASCKG develops and maintains standards (code of conduct), and certifies sea kayak guides according to these standards, as well as represents the interests of professional sea kayak guides to private, commercial, and government organizations (ASCKG, 2012). The ASCKG standards pertain to the minimal certification requirements for sea kayak guides, guide-to-client ratios, adoption of ASCKG minimal impact standards, and equipment requirements. The ASCKG minimal impact standards are very similar to the LNT program; however, there is one glaring omission. The ASCKG standard omits leaving what people find, such as cultural artifacts. This is a significant issue in some of the BC's coastal national parks, such as Pacific Rim National Park Reserve, yet it is not included in the standard. Although, the ASCKG standards have been adopted by Gwaii Haanas National Park Reserve, Pacific Rim National Park Reserve, and Gulf Islands National Park Reserve, as a requirement for tour operators, operating in these national parks (ASCKG, 2012). This example highlights the challenges of establishing a tour operators' association that goes beyond merely representing the

interests of tour operators and requires tour operators to develop and comply with jointly established standards, which could result in the lowest common denominator standard or code of conduct.

The Algonquin Park Tour Operators' Association should rely on already established certifications, such as the LNT Trainer Course, Wilderness First Aid, and ORCKA certifications, instead of developing new certifications. The case study research reveals that guides in APP already possess the hard skills and in some cases certifications, such as ORCKA certification, but are not familiar with or do not practice many LNT principles. Thus, the Algonquin Park Tour Operators Association should focus on incorporating the LNT program into guided canoe and hiking trips in APP. This would greatly broaden the support, promotion, and adoption of the LNT program in APP. It would also help to ensure that the outdoor skills taught by guides were low-impact camping skills. The wide variation in the guides' knowledge and adoption of LNT principles in this case study implies that other guides, working for other tour operators, may also vary greatly in their knowledge and adoption of LNT principles. This means some clients may be taught low-impact skills or LNT principles, while other clients may be taught high-impact skills. In order to establish a minimum understanding of low-impact practices, guides should be required to complete at minimum the LNT Trainer Course level, in addition to First Aid and CPR certification.

As with developing the VMP partnership with Ontario Parks, the Algonquin Park Tour Operators Association should be inclusive and representative of all the tour operators in APP, endeavour to promote learning and adopting new information and to ensure equitable power and mutual respect and trust.

### 7.3 Business Licensing

Establishing a code of conduct or standards by consensus, as the ASCKG example highlighted, can be difficult, if not impossible. If the Algonquin Park Tour Operators Association were successful in establishing a code of conduct or standard that was accepted by park management or agree to require all guides to complete the LNT Trainer Course, then the standard or LNT program should officially adopted by APP and, potentially, other provincial parks. This would be a similar situation as the sea kayak guide standards adopted by a number of Canadian national parks. If the LNT program is not adopted as the official code of conduct, than the newly established code of conduct should be just as stringent or more stringent than the LNT program. In the event the Algonquin Park Tour Operators Association is unable to establish a code of conduct or standard that was acceptable to the members of the Algonquin Park Tour Operators Association and park management, it might require Ontario Parks to take a more cohesive approach to ensure tour operators are incorporating the LNT program into their guided canoe and hiking trip services.

Currently, Ontario Parks does not require commercial tour operators operating in APP, or any other provincial park in Ontario, to obtain a business licence to conduct tours in provincial parks. This differs significantly from Parks Canada, the national parks agency, that requires businesses, including commercial tour operators, conducting any part of their operation within a national park to obtain a business licence (Parks Canada, 2012). The purpose of the business licence is to ensure that commercial activities occurring within a national park are carried out in a manner that is consistent with the *Canada National Parks Act* (2000) and the goals and objectives in park's guiding management documents (Parks Canada, 2012). The business licence is used to ensure the protection of ecosystems and cultural features, positive visitor experiences,



public safety, and consistency and fairness for commercial tour operators (Parks Canada, 2012). For example, to obtain a business licence in Gulf Islands National Park Reserve, commercial tour operators' must meet the following conditions:

- Proof of third-party liability insurance policy for \$2 million;
- Proof of first aid and CPR certification for all staff operating in the park;
- Proof that all marine vessels are adhering to Transport Canada's standards;
- All operators and their staff view the orientation package (including an orientation presentation, and additional information on the park, park regulations and guidelines);
- All kayak guides must show proof of certification as day guide or assistant lead guides as a minimum, depending on their operations; and
- All operators must provide trip log to Parks Canada. (Parks Canada, 2012, p. 2)

In addition, commercial tour operators must also comply with the “general terms and conditions” of the business licence. Two of the general terms and conditions relevant to this case study are:

10. Groups are required to practice low-impact camping and visitation activities in designated areas only. Garbage must be packed out (not buried). Refer to guidelines at [www.leavenotrace.ca](http://www.leavenotrace.ca).

12. The operator must ensure that clients are oriented and aware of Parks Canada's regulations and policies associated with the location of use within the park. Parks Canada will include an orientation presentation with your licence. It is a requirement for all operators and guides to view this presentation. (Parks Canada, 2012, p. 10)

Requiring commercial tour operators operating in APP to obtain a business licence, on an annual basis, would enable Ontario Parks to stipulate specific conditions that assist the agency in attaining the objectives set out in the *PPCRA* (2006) and the goals and objectives of the park's management documents.

The introduction of a business license would also create a new revenue stream for Ontario Parks. The business licence fee would allow Ontario Parks to earn a small income for permitting the commercial use of publicly owned resources. The cost of obtaining a business licence from

Parks Canada is nominal, approximately \$58.80 per annum, for commercial tour operators (Personal communication, March 15, 2012). It is recommended that the cost of a business licence be higher than the fee charged by Parks Canada.

Currently, Ontario Parks only charges commercial businesses operating within the boundaries of APP with permit fees. The *PPCRA* (2006) states that “Subject to this Act and the regulations, the Minister may enter into commercial agreements with respect to the use and occupation of land in provincial parks and conservation reserves” (c.12, s.14(1)). Furthermore, the *PPCRA* (2006) stipulates that “The Minister may establish and charge fees (a) for the use of provincial parks or of any facilities or services in provincial parks and (b) fee and rentals for any licence, permit, lease or other right issued, made or given in respect of a provincial park” (c.12, s.26 (1)). These excerpts from the *PPCRA* (2006) clearly indicate that the Minister of Natural Resources already possesses the authority to charge tour operators for use of provincial parks.

Instituting a business licence fee would require consultation with the outdoor tourism industry, including business operators, tourism associations, chambers of commerce, park stakeholder groups, and Ontarians in general, in order to determine the positive and negative social, economic, and environmental impacts of the proposed business licence requirements and fees. The extent of opposition to the business licence provisions may be dependent on the general terms and conditions as well as cost of the business licence. For example, tour operators and guides should be required to possess LNT certification, which would greatly increase personal costs for guides and/or operators. However, it could increase the professionalism of tour guides and the recreational experience for the client. This study also found that the majority of guides already possess one or more certifications, such as ORCKA; therefore, additional costs

would be minimal, as the LNT Trainer course costs between CAD \$150.00 to \$200.00 (LNT Canada, 2011).

Indeed, the requirements outlined in the Parks Canada business licensing general terms and conditions do not differ significantly from the Paddling Ontario Alliance (POA) membership standards. POA was formed by adventure travel providers in Ontario, Canada that seek to establish high standards for safety, service and environmental responsibility (POA, n.d.). The POA is comprised of twenty members with four members offering outfitting and guiding services in APP. The tour operator in this study is currently a member of the POA as well as other commercial tour operators operating in APP. To become a POA member, the commercial tour operator must meet the following conditions:

- Carry appropriate liability insurance (minimal \$1 million, with a recommendation for \$2 million);
- Hold a dedicated staff training session for all new staff and have a staff manual available;
- Maintain standards of safety that includes all guided certifications must be valid and up-to-date for trips as outlined by the following or equivalent regulatory bodies: ORCKA, CRCA, OWWA, BCU, AECSKO, or ACA;
- Guides have CPR and Wilderness First Aid certification;
- Licensed to operate a tourist business in Ontario;
- Have a risk and emergency management plan for all trips; and
- All POA members comply with the practices as outlined in our the “Environmental Policy” to ensure that clients, guides and workers leave minimal evidence of their travels in the wilderness. (POA, n.d.)

There are similarities between Parks Canada business license general terms and conditions and POA’s standards, such as proof of first aid and CPR certification, new staff training, and insurance coverage. The major differences between the two standards are the optional guide certifications and compliance with the “Environmental Policy.” Under Parks Canada’s general terms and conditions, guides must possess certifications, although not LNT certification. In addition, POA’s environmental policy is very limited in scope, which only include proper

disposal of waste, use of biodegradable detergents, and compliance with provincial park regulations (POA, n.d.). The POA's environmental policy is far less stringent than the LNT program utilized by Parks Canada. However, in both instances, guides were not required to possess LNT certification. Membership to POA is also limited and does not represent all of the commercial tour operators in APP. Nevertheless, some of the requirements of POA membership may be applied to tour operators in APP, such as training, insurance, and emergency preparedness requirements.

## Chapter 8: Conclusion

APP is the oldest provincial park in Canada and Ontario. As the first provincial park, it fulfills a special role in Ontario's provincial park system. It is the last remaining provincial park that is still planned and managed for multiple- and wise-use, although the *PPCRA* (2006) requires the maintenance of ecological integrity to guide all aspects of planning and management of Ontario's provincial parks. Park management has the formidable task of planning and managing for ecological integrity, while accommodating 830,899 visitors per year (MNR, 2010) that have access to three resorts, 304 cottages, eight children's camps, an art gallery, a museum, a visitors' centre, three commercial concessions, 65 temporary hunting camp sites, three research stations, one radio observatory, 11 organized campgrounds with 1,434 campsites, 29 interior access points to 1,946 interior campsites, three long-distance backpacking trails, 16 day backpacking trails, and 14 historic ranger cabins (MNR, 1998), as well as permitting commercial logging in 73% of the park's total area.

The only VMP framework used to plan and manage for almost a million park visitors' annually is carrying capacity. Utilizing this VMP framework, 242,699 camper nights in the interior of the park is deemed to be an acceptable level of use that would not result in undesirable social or ecological conditions in the interior of APP. The visitor strategy used to limit the number of visitors is the park permit system. The efficacy of the carrying capacity framework has been challenged by many scholars and practitioners for failing to identify a "magic number" of visitors that will not cause unacceptable change to the natural and social environments. Research shows that visitors' preferences for different types of outdoor recreation settings varies, therefore the carrying capacity may change for each recreational setting. Thus, the "average

camper” does not exist. To separate the different user groups, APP utilizes park zoning. This means that different activities and number of users are separated into different areas of the park.

Despite limiting use and zoning, the ecological conditions of the interior of APP continue to deteriorate. This study reveals that the most commonly observed visitor impacts, seen by seasoned guides in the interior of APP, are litter, campfire-related damage, and trampling of vegetation. The continued prevalence of these impacts may be attributed to unskilled, uninformed, careless, and illegal visitor actions (Hendee & Dawson, 2002). Interpretation can be used to effectively address unskilled and uninformed actions as these are related to visitor’s knowledge and skill level (Hendee & Dawson, 2003; Manning, 2003). Interpretation is a visitor management tactic that can be used by park management to encourage visitors to adopt an enhanced conservation ethic and modify their behaviour to reduce their impact on the park’s resources.

The messy situation created by government cuts in funding and personnel means that Ontario Parks does not possess the resources to deliver an effective interpretation program to mitigate or eliminate visitor impacts. Instead, park management uses a top-down, command-and-control approach to visitor management that relies on a set of rules and regulations. Enforcement of these rules and regulations is minimal as Ontario Parks does not possess the funding and personnel to ensure visitors abide by these rules and regulations. Indeed, many “friends of” organizations have taken over the delivery of interpretation in many provincial parks. As such, park management has entered into a MOU with Algonquin Backcountry Recreationalists and The Friends of Algonquin Park to promote and deliver the LNT program in APP through non-personal contact. Unless a park visitor access LNT information on the ABR or The Friends of Algonquin Park websites before their trip or reads the *APP Information Guide* or

*The Raven*, the visitor will not be aware of LNT program until they arrive at APP. The effectiveness of the current delivery strategy of the LNT program may be ineffective as research has shown that non-personal contact is far less effective than personal contact (e.g., Fazio, 1979). The use of print media assumes that park visitors will understand the LNT principle, without being told or shown how to practice the skill and, immediately adopt the behaviour. However, this is not true. Littlefair (2004) found that, in order to encourage behaviour modification, visitors must receive verbal instructions and see the behaviour modeled. Based on these findings, park management should pursue partnerships with other affected stakeholders, such as tour operators, in order to incorporate personal contact into the delivery of the LNT program in APP.

Tour operators, operating in APP, represent a potential delivery-agent for the LNT program. Given the amount of time spent with the park visitor, guides can capitalize on this time to teach LNT principles to park visitors. Through the use of verbal messages and modeling of appropriate behaviour, guides can teach visitors the LNT principles, especially the LNT principles that specifically address the most commonly observed visitor impacts in APP. The findings from this case study reveal that a well established and reputable tour operator operating in APP teaches at least one of the seven LNT principle on guided canoe trips in APP. Many guides practiced an aspect of the LNT of disposing of waste, such as picking up or disposing of garbage in a responsible manner; however, some guides are not disposing of grey water properly. Even though campfire-related impacts were identified as the second most commonly observed visitor impact, guides were still inclined to utilize a campfire for cooking all the meals eaten at the campsite and a nightly pleasure fire. Trampling of vegetation was identified as the third most commonly visitor impact in APP. Although, many of the guides modeled appropriate behaviour

by staying on designated portages, in the absence of verbal messages clients did not understand the importance of staying on the portage, even in poor conditions, such as muddy terrain.

These findings suggest that there is an opportunity to improve tour operators' knowledge and use of the LNT program in their services. Firstly, Ontario Parks and tour operators need to develop a strong partnership to ensure that VMP incorporates the knowledge, beliefs, attitudes, and interests of tour operators that are affected by the outcome of planning exercises. This will assist in developing visitor management plans, including strategies and tactics, that are acceptable to tour operators and contribute to the achievement of the park's goals and objectives. Tour operators need to become involved in the implementation and monitoring of visitor management strategies and tactics in order to ensure that the social and ecological conditions of APP are maintained. Tour operators can assist by incorporating the LNT program into their guiding services and report incidences of deteriorating conditions to park management. Secondly, through the re-establishment of an APP tour operators' association, tour operators interests can be more efficiently and effectively communicated to Ontario Parks through this channel. The APP tour operators' association can also provide an important forum to establish a code of conduct or standards for tour operators in APP. Finally, park management should introduce a business licence fee, with general terms and conditions, that require tour operators to adhere to the code of conduct established by the organization and ensure LNT principles are incorporated into guide services offered by tour operators. This will create a new revenue stream for APP that should be utilized to fund more strategic VMP, such as LAC or VERP. Engaging in VMP should greatly increase the quality of the visitors experience and minimize visitors' impacts on the social and ecological conditions of APP.



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## **Appendix A – Tour Guide Interview Questions**

1. How many years have you been tripping in Algonquin Park (APP)?
2. How many years have you been a canoe guide in AP?
3. How many years have you been a canoe guide with Algonquin Outfitters (AO)?
4. Before joining AO, did you have any previous experience as a canoe guide? If yes, how long?
5. How did you become a canoe guide with AO?
6. Do you have any certifications or credentials, such as CPR, Wilderness First Aid, Ontario Recreation Canoe and Kayak Association (ORCKA) certifications, or Ontario Recreation Canoe Association (ORCA) certifications?
7. More specifically, have you received any low-impact outdoor education skills training?
8. Did you receive any guide training from Algonquin Outfitters? If so, what?
9. Are you aware of the Leave No Trace principles? If so, how did you learn about LNT?
10. Can you describe any of the Leave No Traces principles?
11. Generally, are you aware of Algonquin Parks management plan objectives? If so, can you describe them?
12. <Read and provide a copy of APP's objectives to interviewee> As a guide in APP, do you think you can or cannot contribute to the achievement of AP's management plan objectives? If so, how can you contribute or if not, why?
13. Do you think AO's clients can or cannot contribute to the achievement of AP objectives? If so, how can you contribute or if not, why?
14. Generally, do you know AO's mission statement?
15. Generally, do you know AO's guided canoe trips goals?

16. <Read and provide a copy of AO's mission statement and goals to interviewee> As a guide with AO, what do you think your role is in achieving AO's canoe trip mission statement and goal(s)?

17. Do you think park visitors have any impacts on the natural environment of the park?

**IF YES:**

18. How significant do you think visitors' impacts are on the natural environment of the park?

19. When do you think the most change to the natural environment occurs - at low, medium or high levels of use and after initial or long term use?

20. Do you think campers should be dispersed across the park or concentrated in a few areas in the park?

21. Can you describe the impacts visitors have on the natural environment of the park?

22. Describe the low impact camping skills that you would teach on a canoe trip to reduce the visitor impacts you just described.

23. Do you think providing an ecological or social rationale for practicing the skills you just described should be provided? If so, why or if not, why?

**IF NO:**

24. Do you think visitors have no impact at all or it is too insignificant?

25. Do you think visitors have no or limited impact because Algonquin Park management limits the number of visitors?

26. Do you think visitors have no or limited impact because of the rules and regulations of backcountry use are effective?

27. Do you think visitors have no or limited impact because of visitors are generally possess the skills required?

28. Do you think other activities inside the park, if any, have a negative impact on the natural environment?

29. Do you think other activities outside the park, if any, have a negative impact on the natural environment?

30. Do you think visitors have an negative or positive impact(s) on other visitors?

**IF YES**

31. How significant do you think visitors' impacts are on other visitors in the park interior?

32. Do you think conflict arises over conflicting values regarding outdoor recreation?

33. Can you describe the negative and/or positive impact(s) visitors have on other visitors in the park?

34. Describe the low impact camping skills that you would teach on a canoe trip to reduce the visitor impacts you just described.

35. Do you think providing the social rationale for practicing the skills you just described should be provided? If so, why or if not, why?

**IF NO**

36. Do you think visitors have no impact at all or it is too insignificant?

37. Do you think visitors have no or limited impact because Algonquin Park management limits the number of permits per access point?

38. Do you think visitors have no or limited impact because Algonquin Park management limits the number of group size to nine persons?

39. Do you think visitors have no or limited impact because visitors generally share similar values regarding outdoor recreation?

40. Are you aware that Algonquin is the first and only provincial park in Ontario to officially adopting LNT skills/ethics this summer? If so, how did you heard about it?

41. Do you think that AO should or already does adopt and practice LNT skills/ethics on guided canoe trips?

42. Do you think adopting LNT skills/ethics, such as cooking on camp stove instead of over a fire, would detract or add to the client's overall experience? Do you think eliminating fires on guided canoe trips would detract or add to the clients overall experience?
43. Do you think client's would prefer, or not prefer, to learn and practice LNT skills?

## **Appendix B – Tour Guide Introduction and Verbal Consent**

Before we begin the interview, I want to make it clear that everything you say will remain completely confidential. Your name will not be linked to any comments you make and unless you specifically indicate your consent, your name will not appear in any report or publication of this research.

I will be mailing you a consent form, which outlines the details of my project. Could please read it, sign it and mail it back to be in the stamped envelope provided. If you do not return this form to me I will not be able to use the information gather through this interview in my study.

Your participation in the study is completely voluntary and you may choose to stop participating at any time. You may also refuse to answer particular questions if you so choose.

I have to obtain your verbal consent so do you agree to participate in my study titled “The Role of Tour Operators in Visitor Management Planning: The Case Study Algonquin Provincial Park”?

Is it ok that I record the interview, as this will ensure that I don’t miss any important details in my notes? Only I will listen/have access to these recording....

### **Details:**

#### **Confidentiality:**

Unless you choose otherwise, all information you supply during the research will be held in confidence and unless you specifically indicate your consent, your name will not appear in any report or publication of the research and your name will not be linked to the comments you make during the interview. Data will be collected by handwritten notes and/or by a digital voice recorder based on your approval. Your data will be safely stored in a locked facility and only the researcher will have access to this information. The data will be stored for a minimum of two years, and the will be archived at York University. Confidentiality will be provided to the fullest extent possible by law.

#### **Voluntary Participation:**

Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer will not influence the nature of your relationship with York University or the Land Trust either now, or in the future.

#### **Withdrawal from the Study:**

You can stop participating in the study at any time, for any reason, if you so decide. Your decision to stop participating, or to refuse to answer particular questions, will not affect your



relationship with the researcher, York University, the Land Trust, or any other group associated with this project. In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

## **Appendix C – Canoe Trip Participants Interview Questions**

1. What made you decide to go on a guided canoe trip?
2. What did you hope to get out of the guided canoe trip?
3. What made you choose to go to Algonquin Park instead of another provincial park?
4. Why do you choose Algonquin Outfitters instead of another tour operators?
5. How many guided canoe trips have you been on with Algonquin Outfitters?
6. How many days was the guided canoe trip(s)?
7. How many people were in your group?
8. How many guides did you go with?
9. Had you been on a canoe trip before – either with a guide or on your own?
10. Before the trip, did Algonquin Outfitters ask you for any information regarding what you hoped to get out of the trip and your skill and fitness level?
11. Were you aware of your canoe route before your departure day?
12. Were you provided any information before the trip?
  - a. Where you provided with information about the animals, trees or plants in the park? Or the heritage of the park, such as Native or European history?
  - b. What to pack?
  - c. Parks rules and regulations?
  - d. Training such as exercises?
  - e. Cleaning your footwear before coming to the park?
13. Did you participate in carrying backpacks and/or canoes on the portage? How was that experience? Did you find the portage difficult? Was it wet, did you walk around wet areas, if any?
14. Were any of the portages crowded? Did you land the canoe far to one side or need to walk over vegetation to access the portage?
15. Did you participate in locating a place to pitch your tent?
16. Did the guide explain the reason he or she selected that particular place?
17. Did you participate in setting up your tent?

18. Did your group need to pick up garbage on the campsite?
  - a. If yes, did you have to do it at every site you visited?
19. Did your group check the campsite for garbage before leaving the campsite?
20. Did your guide point out the thunderbox?
21. Did you feel comfortable using the thunderbox?
22. Where did you wash your dishes?
  - a. What did you do with the dish water?
23. Where did you wash your face and brush your teeth?
24. Did you have a fire to cook your meals? If so, what meals? If so, did you participate in cooking on the fire?
25. Did you have a pleasure fire in the evening?
26. Did you participate in collecting firewood? If so, did the guide provide any direction on how to collect firewood? How to build a cooking fire? Where did you build the fire?
27. Did the group also cook on the stove? If so, did you participate in cooking on the stove? Were you shown how to light it?
28. Did you encounter any wildlife on your trip? If so, what did you see? Tell me about the interaction? How did you observe it?
29. Did you fish on your canoe trip? If so, do you have a license? What kind of bait did you use? What kind of fish did you catch? Did you release or eat them?
30. How did you store your food? Did you have any animals come to your campsite in the night?
31. Did you encounter any artifacts, such as a ranger cabin, or log chute? If so, what did you see? Tell me about the interaction? How did you observe it? Did you take pictures or take home a souvenirs?
32. Did you have fun on the guided canoe trip?
33. Do you feel you have the skills to go on your own canoe trips, without a guide?
  - a. If not, why?
34. Have you been on a canoe trip since?
  - a. Do you plan on going on a (another) guided or self-guided canoe trip again? If not, why?

- b. If yes, Tell me about your trip?
    - i. When did you go? How long did you wait between the guided trip and your own?
    - ii. Where did you go?
    - iii. How long was the trip?
      - 1. Do you remember the route? How did you plan it? Was there any portaging – were they long? How did you find the level of difficulty of the portage? Did you find them mucky? Did you walk around the wet spots?
    - iv. How many people were in your group?
    - v. How did you find purchasing and packing your food and equipment?
    - vi. How did you store your food at night? Did you have any visitors?
    - vii. Did you find the campsite had enough good spots for tents? Or did you need to pitch a tent on vegetation?
    - viii. Did you find there was a problem with garbage on any of the sites you camped on? If so, did you pick up waste?
    - ix. Did you check the site for waste before you left?
    - x. How did you cook your meals? Did you use a fire? If so, did you rebuild the fire pit? Did you find it hard to find fire wood? How did you collect it?
    - xi. Where did you wash your dishes? Did you use biodegradable soap? What did you do with the waste water?
    - xii. Where did you wash your face and brush your teeth?
    - xiii. Do you plan on going on another canoe trip?
    - xiv. Did you have fun on your own canoe trip?
    - xv. What challenges did you encounter?
35. Did you find that you used the skills you learned on the guided canoe trip on your own trip?
36. Did you learn camp skills any other way, such as reading a book, watching a video, visitors centre, park staff, AO staff, etc?

## **Appendix D – Canoe Trip Participants Introduction and Verbal Consent**

Before we begin the interview, I want to make it clear that everything you say will remain completely confidential. Your name will not be linked to any comments you make and unless you specifically indicate your consent, your name will not appear in any report or publication of this research.

I will be mailing you a consent form, which outlines the details of my project. Could please read it, sign it and mail it back to be in the stamped envelope provided. If you do not return this form to me I will not be able to use the information gather through this interview in my study.

Your participation in the study is completely voluntary and you may choose to stop participating at any time. You may also refuse to answer particular questions if you so choose.

I have to obtain your verbal consent so do you agree to participate in my study titled “The Role of Tour Operators in Visitor Management Planning: The Case Study Algonquin Provincial Park”?

Is it ok that I record the interview, as this will ensure that I don’t miss any important details in my notes? Only I will listen/have access to these recording....

### **Details:**

#### **Confidentiality:**

Unless you choose otherwise, all information you supply during the research will be held in confidence and unless you specifically indicate your consent, your name will not appear in any report or publication of the research and your name will not be linked to the comments you make during the interview. Data will be collected by handwritten notes and/or by a digital voice recorder based on your approval. Your data will be safely stored in a locked facility and only the researcher will have access to this information. The data will be stored for a minimum of two years, and the will be archived at York University. Confidentiality will be provided to the fullest extent possible by law.

#### **Voluntary Participation:**

Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer will not influence the nature of your relationship with York University or the Land Trust either now, or in the future.

#### **Withdrawal from the Study:**

You can stop participating in the study at any time, for any reason, if you so decide. Your decision to stop participating, or to refuse to answer particular questions, will not affect your

relationship with the researcher, York University, the Land Trust, or any other group associated with this project. In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

## **Appendix E – Operations Manager Interview Questions**

1. Tell me the story of the company.
2. How did you come to work for the company
3. How many years have you worked there? Do you also take clients on canoe trips?
4. How many years have you been canoe tripping in the park?
5. Why do you think people choose to go on a guided canoe trip with Algonquin Outfitters?
6. Why do you think people choose the company over other outfitters in or near the park?
7. What do you think the company is known for? (i.e. high-tech, light weight equipment, service, etc.)
8. In terms of Canadian clients, would you say most of your clients go on 1 guided canoe trip, a few guided canoe trips, or come back most or every summer?
9. Do some or most clients provide feedback on their guide and experience? If you follow up and ask clients this or do they contact you?
10. How do you find or recruit new canoe guides?
11. What is the criteria for becoming a guide?
12. Are new canoe guides trained in any way?
13. Are there any certifications required?
14. What is the company's mission statement?
15. What is the objective of the company's guided canoe trips?
16. What is your process for planning guided canoe trips?
17. What is the purpose of the questionnaire?

18. Do you provide them with any pre-trip information? If so, what information?
19. Do you think any other information should be provided that currently is not? Have clients request any other information?
20. How do you select the canoe route? Do the clients have any input in planning the route?
21. How do you match the guide with the group?
22. Generally, are you aware of Algonquin Parks management plan objectives? If so, can you describe them?
23. Are you aware of the Leave No Trace program?
24. Can you describe any of the LNT skills?
25. Are you aware that Algonquin is the first and only provincial park in Ontario to officially adopting LNT skills/ethics this summer? If so, how did you heard about it?
26. Do you think that AO should or already does adopt and practice LNT skills/ethics on guided canoe trips?
27. Do you think adopting LNT skills/ethics, such as cooking on camp stove instead of over a
28. Do you think client's would prefer, or not prefer, to learn and practice LNT skills?